

**aSAN JOAQUIN VALLEY  
AIR POLLUTION CONTROL DISTRICT**

**Kern Oil & Refining Company  
(S-37)**

**FINAL ENGINEERING EVALUATION**

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# **Title V Application Review Petroleum Refinery**

Project: 961097

Date Deemed Complete: June 12, 1997

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## **PROPOSAL**

Kern Oil & Refining Company is proposing that the initial Title V Operating Permit be issued for its existing petroleum refining facility in Bakersfield, Kern County, CA. The purpose of this engineering evaluation is to identify all applicable requirements, determine if the facility will comply with those applicable requirements, and to provide the legal and factual basis for proposed permit conditions.

## **FACILITY LOCATION**

Kern Oil & Refining Company is located at Panama Ln & Weedpatch Hwy in Bakersfield, California. The location falls in the geographic Sec. 25, T30S, R28E, in Kern County.

<b>FACILITY-WIDE, SULFUR UNITS, OIL/WATER SEPARATOR, BLOWDOWN UNIT</b>
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**I. EQUIPMENT LISTING**

The following table is a list of the equipment included in this evaluation:

Permit Unit #	Equipment Description
S-37-0-1	FACILITY-WIDE REQUIREMENTS
S-37-5-1	LIQUID-LIQUID MEROX SWEETENING UNIT INCLUDING MIXER, CAUSTIC SETTLER, CATALYST INJECTION PORT, AND ASSOCIATED PUMPS AND PIPING
S-37-9-8	OIL/WATER SEPARATION OPERATION INCLUDING API SEPARATOR, CORRUGATED PLATE SEPARATOR, INDUCED AIR FLOATATION UNIT, DRAIN PIT, 4 FILTERS, STRIPPING COLUMN, CARBON ADSORPTION AND TWO 5,000 BBL WASTE WATER TANKS
S-37-10-2	500 GALLON BLOWDOWN RECEIVING SYSTEM INCLUDING HORIZONTAL CAUSTIC BUBBLER SCRUBBER WITH STACK, DROP OUT PIT WITH COVER AND PIPING TO DROP OUT VESSEL
S-37-78-1	SULFUR SCRUBBING SYSTEM INCLUDING MEA/DEA ABSORBER, AMINE OXIDATION UNIT, ACID GAS SULFUR REMOVAL SYSTEM, AND ASSOCIATED BLOWERS, PUMPS AND PIPING.
S-37-105-3	SOIL AND GROUNDWATER REMEDIATION OPERATION SERVED BY A VACLEAN 1000-2 INTERNAL COMBUSTION ENGINE WITH A 3-WAY CATALYTIC CONVERTER: REPLACE INTERNAL COMBUSTION ENGINE WITH 3-WAY CATALYTIC CONVERTER WITH A 100 BHP VOLKSWAGEN MODEL 026.2 INTERNAL COMBUSTION ENGINE WITH A 3-WAY CATALYTIC CONVERTER

**II. GENERAL PERMIT TEMPLATE USAGE**

The applicant is requesting to use the facility-wide model general permit template (SJV-UM-0-2, Facility Wide Umbrella). The applicant has requested to utilize template No. SJV-UM-0-2, Facility Wide Umbrella for this facility. Based on the information submitted in the Template Qualification Form, the applicant qualifies for the use of this template.

**III. SCOPE OF EPA AND PUBLIC REVIEW**

Certain segments of the proposed Operating Permit are based on model general permit templates that have been previously subject to EPA and public review.

The terms and conditions from the model general permit templates are included in the proposed permit and are not subject to further EPA and public review.

For permit applications utilizing model general permit templates, public and agency comments on the District's proposed actions are limited to the applicant's eligibility for model general permit template, applicable requirements not covered by the model general permit template, and the applicable procedural requirements for issuance of Title V Operating Permits.

The following permit conditions, including their underlying applicable requirements, originate from model general permit templates and are not subject to further EPA and Public review:

Conditions 1-37 of the Facility Wide Requirements S-37-0-1.

#### **IV. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES**

District Rule 1100, Equipment Breakdown (Amended December 17, 1992)  
(Non SIP replacement for Kern County Rule 111)

District Rule 1160, Emission Statements (Adopted November 18, 1992)

District Rule 2010, Permits Required (Amended December 17, 1992)

District Rule 2020, Exemptions (Amended July 21, 1994) (Non SIP replacement for Kern County Rule 202)

District Rule 2031, Transfer of Permits (Amended December 17, 1992)

District Rule 2040, Applications (Amended December 17, 1992)

District Rule 2070, Standards for Granting Applications (Amended December 17, 1992)

District Rule 2080, Conditional Approval (Amended December 17, 1992)

District Rule 2520, Federally Mandated Operating Permits - except section 9.4.2 (Adopted June 15, 1995)

District Rule 4101, Visible Emissions (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 401)

District Rule 4601, Architectural Coatings (Amended December 17, 1992)

District Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities (Adopted November 15, 2001)

District Rule 8031, Bulk Materials (Adopted November 15, 2001)

District Rule 8051, Open Areas (Adopted November 15, 2001)

District Rule 8061, Paved and Unpaved Roads (Adopted November 15, 2001)

40 CFR Part 61 Subpart M, National Emission Standard for Asbestos

40 CFR Part 82 Subpart F, Stratospheric Ozone

## **V. APPLICABLE REQUIREMENTS NOT ADDRESSED BY GENERAL PERMIT TEMPLATES**

District New and Modified Stationary Source Review Rule

District Rule 1070, Inspections (amended December 17, 1992)

District Rule 1081, Source Sampling (Amended December 16, 1993) (Non SIP replacement for Kern County Rule 108.1)

District Rule 2010, Permits Required (Amended December 17, 1992)

District Rule 2520, Sections 9.4.2 and 9.5.2, Federally Mandated Operating Permits (Adopted June 15, 1995)

District Rule 4001, New Source Performance Standards (Amended April 14, 1999)

District Rule 4201, Particulate Matter Concentration (Amended December 17, 1992)

District Rule 4301, Fuel Burning Equipment (Amended December 17, 1992)

District Rule 4451, Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants (Amended December 17, 1992)

District Rule 4452, Pump and Compressor Seals at Petroleum Refineries and Chemical Plants (Amended December 17, 1992)

District Rule 4801, Sulfur Compounds (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 407)

40 CFR Part 60, Subpart J, Standards of Performance for Petroleum Refineries

40 CFR Part 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

40 CFR Part 60, Subpart NNN, Standards of Performance for VOC Emissions in the Synthetic Organic Chemicals Manufacturing Industry Distillation Operations

40 CFR Part 60, Subpart QQQ, Standards of Performance from Petroleum Refinery wastewater Systems

40 CFR Part 68, Chemical Accident Prevention Provisions

Petroleum Refinery MACT Standard

## **VI. REQUIREMENTS NOT FEDERALLY ENFORCEABLE**

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permits. The terms and conditions that are part of the facility's Title V permit are designated as Federally Enforceable Through Title V Permit.

District Rule 4102 Nuisance

For this facility, condition 38 of the requirements for the facility wide requirements is based on the rule listed above and is not Federally Enforceable through Title V.

## **VII. COMPLIANCE**

### **A. Requirements Addressed by Model General Permit Templates**

#### **1. Facility Wide Requirements**

Condition numbers 1 through 3 and 5 through 38 added to the facility wide requirements S-37-0-1 assure compliance with federally applicable facility-wide requirements. Section IV of template SJV-UM-0-2 includes a demonstration of compliance for these applicable requirements.

**B. Requirements Not Addressed by Model General Permit Templates**

**2. New and Modified Stationary Source Review Rule**

**a. Caustic/Merox Treater (S-37-5-1)**

This unit was not subject to District NSR Rule at the time the applicant obtained Permits to Operate for the facility. There are no NSR-based conditions on the permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for permit unit (S-37-5-1).
- Condition 2 from the PTO was included as condition 2 of the requirements for permit unit (S-37-5-1).

**b. Oil Water Separator Operation (S-37-9-8)**

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for permit unit (S-37-9-8).
- Condition 2 from the PTO was included as condition 2 of the requirements for permit unit (S-37-9-8).
- Condition 3 from the PTO was included in condition 3 of the requirements for permit unit (S-37-9-8).
- Condition 4 from the PTO was included in condition 4 of the requirements for permit unit (S-37-9-8).
- Condition 5 from the PTO was included as condition 5 of the requirements for permit unit (S-37-9-8).
- Condition 6 from the PTO was included as condition 6 of the requirements for permit unit (S-37-9-8).

- Condition 7 from the PTO was included as condition 9 of the requirements for permit unit (S-37-9-8).
- Condition 8 from the PTO was included as condition 10 of the requirements for permit unit (S-37-9-8).
- Condition 9 from the PTO was included as condition 11 of the requirements for permit unit (S-37-9-8).

c. Blowdown Receiving System (S-37-10-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for permit unit (S-37-10-2).
- Condition 2 from the PTO, which stated that the unit must comply with District Rule 4454, was expanded to state the specific requirements and included as condition 5. See discussion under Sections VII.B. for Rule 4454.
- Condition 3 from the PTO was included as condition 2 of the requirements for permit unit (S-37-10-2).
- Condition 4 from the PTO was included as condition 3 of the requirements for permit unit (S-37-10-2).
- Condition 5 from the PTO was included as condition 4 of the requirements for permit unit (S-37-10-2).

d. Sulfur Scrubbing System (S-37-78-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for this permit unit (S-37-78-1).
- Condition 2 from the PTO was included as condition 2 of the requirements for this permit unit (S-37-78-1).

- Condition 3 from the PTO was included as condition 3 of the requirements for this permit unit (S-37-78-1).
- Condition 4 from the PTO, which stated that the unit must comply with District Rules 4451 and 4452, was included as facility-wide requirements (S-37-0-1). See discussion under Sections VII.B for District Rules 4451 and 4452.
- Condition 5 from the PTO was included as condition 4 of the requirements for this permit unit (S-37-78-1).
- Condition 6 from the PTO was included as condition 5 of the requirements for this permit unit (S-37-78-1).

e. Soil Remediation (S-37-105-3)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for this permit unit (S-37-105-3).
- Condition 2 from the PTO was included as condition 42 of the facility-wide requirements (S-37-0-1).
- Condition 3 from the PTO was included as condition 2 of the requirements for this permit unit (S-37-105-3).
- Condition 4 from the PTO was included as condition 3 of the requirements for this permit unit (S-37-105-3).
- Condition 5 from the PTO was included as condition 4 of the facility-wide requirements (S-37-0-1).
- Condition 6 from the PTO was included as condition 5 of the requirements for this permit unit (S-37-105-3).
- Condition 7 from the PTO was included as condition 6 of the requirements for this permit unit (S-37-105-3).
- Condition 8 from the PTO was included as condition 7 of the requirements for this permit unit (S-37-105-3).
- Condition 9 from the PTO was deleted. It is a start-up condition for initial testing, which has already been performed.
- Condition 10 from the PTO was included as condition 8 of the requirements for this permit unit (S-37-105-3). Condition 11 from the PTO was included as condition 8 of the requirements for this permit unit (S-37-105-3).

- Condition 11 from the PTO was included as condition 9 of the requirements for this permit unit (S-37-105-3).
- Condition 12 from the PTO was included as condition 10 of the requirements for this permit unit (S-37-105-3).
- Condition 13 from the PTO was included as condition 11 of the requirements for this permit unit (S-37-105-3). The condition was revised to require 5 years of records to be maintained on site (instead of two years) to be consistent with Rule 2520, 9.4.2.
- Condition 14 from the PTO was included as condition 12 of the requirements for this permit unit (S-37-105-3).
- Condition 15 from the PTO was included as condition 13 of the requirements for this permit unit (S-37-105-3).
- Condition 16 from the PTO was included as condition 14 of the requirements for this permit unit (S-37-105-3).
- Condition 17 from the PTO was included as condition 15 of the requirements for this permit unit (S-37-105-3).
- Condition 18 from the PTO was included as condition 16 of the requirements for this permit unit (S-37-105-3).
- Condition 19 from the PTO was included as condition 17 of the requirements for this permit unit (S-37-105-3).

**3. District Rule 1070, Inspections - (Non SIP replacement for Kern County Rule 107)**

District Rule 1070 has been submitted to the EPA to replace Kern County APCD Rule 107. The requirements of these rules are compared below in Table 1, showing that the District Rule is at least as stringent as the County Rule.

Table 1 - Comparison of District Rule 1070 to Kern County Rule 107

REQUIREMENT	District Rule 1070	Kern County Rule 107
Inspections shall be made by the enforcement agency for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations.	✓	✓
The District has authority to require record keeping, to make inspections and to conduct tests of air pollution sources.	✓	✓

Section 4.0 of this rule states district's authority to require record keeping, to make inspections, and to conduct tests of air pollution sources.

- a. Soil Remediation (S-37-105-2)
  - Condition 11 of the requirements for this permit unit (S-37-105-3) assures compliance with this rule.

**4. District Rule 2520, Sections 9.3.2 and 9.4.2, Federally Mandated Operating Permits**

Section 9.3.2 of the rule requires that periodic monitoring be performed if none is associated with a given emission limit to assure compliance. For permit units not discussed in detail in this section, existing permit conditions are sufficient to assure compliance with applicable requirements; therefore no conditions were added pursuant to Section 9.3.2.

Section 9.4.2 of the rule requires that records of all required monitoring data and support information be retained for a period of at least five years from the date of the monitoring sample, measurement, or report. Condition 9 on the facility-wide permit states the requirements of this section (S-37-0-1).

- a. Sulfur Scrubbing System (S-37-78-1)
  - Conditions 11, 12, and 13 of the permit to operate were added pursuant to Section 9.3.2 to assure proper maintenance, calibration, and operation of the continuous monitor on the sulfur scrubber. The conditions require an annual accuracy testing of the continuous monitoring system used for testing hydrogen sulfide concentration in the exit gas. This monitoring is required by NSPS Subpart J for process units burning refinery gas (see compliance discussion for NSPS Subpart J). Because NSPS Subpart J does not include requirements for periodic calibration and maintenance of the monitoring system, these requirements were added.
  - Condition 12 of the permit to operate states the record keeping requirement for Rule 2520, 9.4.2 (five years).

**5. District Rule 4001, New Source Performance Standards**

This rule incorporates the New Source Performance Standards from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR). All new sources of air pollution and modification of existing sources of

air pollution shall comply with the standards, criteria, and requirements set forth therein. Compliance with the applicable performance standards will be discussed under the sub-heading for each 40 CFR Part 60 subpart.

**6. 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in SOCMI**

This subpart applies to equipment used in the synthetic organic compound manufacturing industry. Refinery processes at Kern Oil do not meet the definition of a synthetic organic chemical manufacturing industry (SOCMI) as define in subpart VV. Therefore this subpart is not applicable.

**7. 40 CFR 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Oil Refineries**

This subpart applies to equipment used to produce intermediate or final products from petroleum constructed, modified or reconstructed (CMR) after January 4, 1983. According to District analyses and Kern Oil, no permitted equipment covered in this subdocument were CMR after this date. Therefore Subpart GGG is not applicable.

**8. 40 CFR 60, Subpart QQQ, Standards of Performance for Equipment Leaks of VOC in Oil Refineries**

This subpart applies to equipment used in refinery wastewater systems for which constructed, modification or reconstruction (CMR) commenced after May 4, 1987. According to District analyses and Kern Oil, no permitted equipment covered in this subdocument were CMR after this date. Therefore Subpart QQQ is not applicable.

**9. 40 CFR Part 63 Refinery MACT**

The requirements of the Refinery MACT are applicable to facilities with total emissions of hazardous air pollutants (HAPs) of ten tons per year of a single HAP or 25 tpy of a combination of HAPs. The 1997 Emissions Inventory data show total emissions of all HAPs from Kern Oil Refinery equal to approximately ten tons per year and no single HAP over 5 tons per year. Because the inventory shows emissions substantially below the MACT trigger threshold, Therefore, the Refinery MACT is not an applicable requirement.

**10. 40 CFR Part 68 Chemical Accident Prevention Provisions**

The requirements of this provision mandate that a subject facility submit a Risk Management Plan to the proper authority. Condition 40 of the facility wide requirements (S-1326-0-1) requires compliance with this provision.

**11. District Rule 4451, Valves, Pressure Relief Valves, Flanges, Threaded**

Connections and Process Drains at Petroleum Refineries and Chemical Plants and 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

District Rule 4451 limits leaks from valves, pressure relief valves, flanges, threaded connections and process drains at petroleum refineries. Conditions 44 through 60 and 68 of the facility-wide permit (S-37-0-1) state the requirements of this rule.

**12. District Rule 4452, Pump and Compressor Seals at Petroleum Refineries and Chemical Plants**

District Rule 4452 limits leaks from pumps and compressors and associated seals that may result in fugitive emissions of VOC at petroleum refineries. In addition, District Rule 4452 addresses test methods and recordkeeping requirements. Conditions 60 through 68 of the facility-wide permit (S-37-0-1) state the requirements of this rule.

**13. District Rule 4454, Refinery Process Unit Turnaround**

District Rule 4454 has been submitted to the EPA to replace Kern County Rule 414.3 which is in the SIP. District Rule 4454 is as stringent as Kern County Rule 414.3, as shown on Table 4.

Table 4 - Comparison of District Rule 4454 and Kern County Rule 414.3

REQUIREMENT	District Rule 4454	Kern County Rule 414.3
A person shall not depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures: a. The organic vapors shall either be recovered, added to the refinery fuel gas system and combusted; or controlled and piped to an appropriate firebox or incinerated for combustion; or flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible. b. All process vessels shall be depressurized into the control	✓	✓

REQUIREMENT	District Rule 4454	Kern County Rule 414.3
facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere. c. All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting.		
Any process vessel that has been depressurized to less than 1020 mm Hg (5 psig).	✓	✓

The purpose of this rule is to limit VOC emissions resulting from the purging, repair, cleaning, or otherwise opening or releasing pressure from a refinery vessel during a process unit turnaround.

- a. Blowdown Receiving Unit (S-37-10-2)
  - Condition 5 of the requirements for this permit unit (S-37-10-2) assures compliance with this rule.

#### 14. District Rule 4625 – Wastewater Separator

The purpose of this rule is to limit VOC emissions from wastewater separators.

- a. Oil/Water Separator (S-37-9-8)

The oil/water separators covered by this permit are subject to the requirements of this rule, except for the air flotation unit, which is specifically exempt pursuant to Section 4.2. The separator is an enclosed unit and shall have no open, hole, or leaks except the breathing vent. Any gauge and sampling devices are equipped with covered lids and the wastewater forbays are covered. The effluent recovered from the separator is sent to a tank with vapor recovery control.

Compliance with the requirements of this rule is assured by conditions 7, 9, 12, and 13 of the permit unit.

#### 15. District Rule 4801, Sulfur Compounds

District Rule 4801 has been submitted to the EPA to replace Kern County Rule 407, which is in the SIP. District Rule 4801 is as stringent as Kern County Rule 407, as shown on Table 5.

Table 5 - Comparison of District Rule 4801 and Kern County Rule 407

REQUIREMENT	4801 District	407 Kern
a person shall not discharge into the atmosphere sulfur compounds exceeding in concentration at the point of discharge 0.2 percent by volume calculated as sulfur dioxide on a dry basis averaged over 15 consecutive minutes.	✓	✓
EPA Method 8 and ARB Method 1-100 shall be used to determine such emissions.	✓	

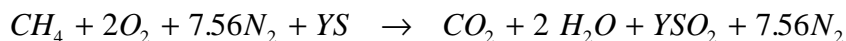
This rule limits the emission of sulfur compounds to 0.2% by volume (2000 ppmv) calculated as SO<sub>2</sub>, on a dry basis averaged over 15 minutes.

a. Soil Remediation Operation(S-37-105-3)

The facility uses certified natural gas or commercial liquefied petroleum gas (LPG) to fuel the IC engines associated with the soil remediation operation (S-37-105). The following calculations will determine the sulfur limit for units using natural gas or LPG.

Sulfur limit for gaseous fuels:

Assuming 0% excess air in the exhaust stream corresponds with maximum SO<sub>x</sub> emissions concentration (neglecting NO<sub>x</sub> and SO<sub>x</sub> relative to SO<sub>2</sub> in the exhaust) and that CH<sub>4</sub> represents a typical gaseous fuel, the combustion equation for natural gas is:



where:

Y = moles of sulfur in the fuel.

Solving the expression for the fraction of SO<sub>2</sub> in the dry exhaust by volume gives:

$$\frac{Y}{1 + 7.56} = 0.002 \Rightarrow Y = 0.01712$$

where:

Y = mole fraction of S per mole of CH<sub>4</sub> combusted

1 = one mole of CO<sub>2</sub>

7.56 = number of moles of N<sub>2</sub>

0.002 = 0.2% by volume = 2000 ppmv limit per District Rule 4801

Use Y to calculate the weight fraction of S in one mole of CH<sub>4</sub>:

$$\frac{(0.01712)(32.06)}{(16.04) + (0.01712)(32.06)} = 0.033 \Rightarrow 3.3\% \text{ S by weight in the fuel.}$$

where:

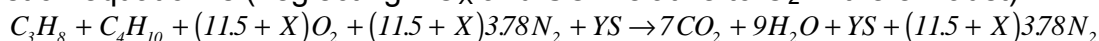
32.06 = molecular weight of sulfur (S)  
 16.04 = molecular weight of methane (CH<sub>4</sub>)  
 0.033 = fraction of S by weight in the fuel

The use of PUC1 or FERC2 regulated gas with a maximum sulfur content of 0.017% will assure compliance with this requirement.

#### Sulfur Limit for LPG:

The following analysis shows that the internal combustion (IC) engine when using commercial LPG fuel is in compliance with this sulfur emissions limit.

Assuming the Liquefied Petroleum Gas is 50% Propane and 50% Butane, the combustion equation is (neglecting NO<sub>x</sub> and SO<sub>x</sub> relative to O<sub>2</sub> in the exhaust):



where      X = moles of excess air  
                  Y = moles of sulfur in the fuel

solving an expression for the fraction of O<sub>2</sub> in the exhaust by volume gives:

$$\frac{X}{16 + X + (11.5 + X)3.78} = 0.04 \Rightarrow X = 2.94$$

where      16 = combined total moles of CO<sub>2</sub> and H<sub>2</sub>O in the exhaust  
                  0.04 = fraction of O<sub>2</sub> in the exhaust by volume

solving for Y in an expression for the fraction of SO<sub>2</sub> in the dry exhaust by volume gives:

$$\frac{Y}{7 + 2.94 + 54.5} = 0.002 \Rightarrow Y = 0.129$$

where      Y = mole fraction of S per mole of CH<sub>4</sub> combusted  
                  7 = moles of CO<sub>2</sub> in exhaust

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1 Public Utilities Code General Order 58-B.

2 FERC regulated gas has a lower maximum sulfur content (~0.0026%, see [Appendix B](#))

54.5 = moles of N<sub>2</sub> exhaust  
0.002 = 2000 ppmv SO<sub>x</sub> emission limit

Use Y to calculate the weight fraction of S in 1 mole of LPG:

$$\frac{(0.129)(32.06)}{102.18 + (0.129)(32.06)} = 0.039 = 3.9\% \text{ S by weight in the fuel}$$

where            32.06 = molecular weight of sulfur (S)  
                     102.18 = average molecular weight of C<sub>3</sub>H<sub>8</sub> and C<sub>4</sub>H<sub>10</sub>  
                     0.0105 = fraction of S by weight in the fuel

Combustion of LPG with a sulfur content of less than 3.9% by weight will assure compliance with District Rule 4801. The sulfur content of commercial grade LPG is 15 grains per 100 cubic feet or less<sup>3</sup>. Converting this to a percentage by weight of LPG yields:

$$\begin{aligned} \%S \left( \frac{lbS}{lbLPG} \right) &= 100 \times \left( \frac{15gr}{100ft^3} \right) \left( \frac{1lb}{7000gr} \right) \left( \frac{24.45L}{molLPG} \right) \left( \frac{1molLPG}{102.18g} \right) \left( \frac{453.59}{1lb} \right) \left( \frac{0.035ft^3}{1L} \right) \\ &= 0.0080\% S \end{aligned}$$

0.008% sulfur by weight is much less than the maximum of 3.9% which will assure compliance with the sulfur emissions limit of 2000 ppmv. The use of commercially available LPG with a maximum of 15g/100 ft<sup>3</sup> is required by permit condition #2 (S-37-105-3).

b. Merox Sweetening Unit(S-37-5-1)

There are no direct emissions from this unit. Oil is processed through the sweetening system to remove organic sulfur (present as mercaptans). The sulfur is removed and dissolved into a caustic solution.

c. Sulfur Scrubber (S-37-78-1)

There are no direct emissions from this unit. The refinery gas leaving the scrubber system is piped to fuel burning equipment within the refinery. Each piece of fuel burning equipment has demonstrated compliance with Rule 4801.

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<sup>3</sup> Specifications for LPG are shown in Appendix C of SJVAPCD General Permit Template #SJV-IC-04-0.

BOILERS, HEATERS AND CRUDE UNIT

## I. EQUIPMENT DETAIL

The following is a list of equipment included in this category:

Permit Unit	Equipment Description
S-37-1	120 MMBTU/HR CRUDE UNIT INCLUDING 2 DESALTERS, 4 FRACTIONATION VESSELS, 1 STRIPPER, 2 ACCUMULATORS, DEPROPANIZER, KNOCKOUT DRUM SCRUBBER, 60 MMBTU/HR TULSA HEATERS INC. PROCESS HEATER, 60 MMBTU/HR BORN HEATERS AND 15 HEAT EXCHANGERS
S-37-2	77.5 Hp Rerun Unit Including Pre-Flash Drum, Fractionator, Stripper, Accumulator, And Associated Valves, Flanges, And Connectors.
S-37-3	25.0 MMBtu/Hr Unifiner Including Splitter, Stripper, Reactor, Separator, 3 Accumulators And 3 Heaters
S-37-4	51.5 MMBtu/Hr Platformer Unit Including Separator, Adsorber, 3 Reactors, 4 Ft. Dia. Stabilizer Tower, Accumulators, 17.1 MMBtu/Hr Charge Heater #1, 8.9 MMBtu/Hr Charge Heater #2, 5.9 MMBtu/Hr Charge Heater #3, 5.5 MMBtu/Hr Stabilizer Reboiler Heater, And 14.1 MMBtu/Hr Splitter Reboiler Heater.
S-37-6	49.0 MMBtu/Hr Coen, Model #D-57, Dual-Fired Induced Draft Water Tube Boiler #6 Replacement Standby Unit For S-37-11
S-37-11	65.0 MMBtu/Hr Oil/Gas Fired Erie City Iron Works Model #12m Keystone Boiler (#9) With Model #Sago Burner
S-37-38	Solvent Unit Including: Naphtha Fractionator (V-1), Light Solvent Fractionator (V-3), V M & P Naphtha Fractionator (V-5), Mineral Spirits Fractionator (V-7), 4 Reflux Drums (V-2, V-4, V-6 And V-8) And 3,750,000 Btu/Hr Gas Fired Fire Tube Heater (H-1)
S-37-77	23.4 MMBtu/Hr Diesel Hydrotreater Unit

## II. GENERAL PERMIT TEMPLATE USAGE

The applicant has chosen not to use any model general permit Templates for the equipment listed above.

## III. SCOPE OF EPA AND PUBLIC REVIEW

Kern Oil Refinery has not requested to utilize model general permit templates for this type of equipment. All terms and conditions from the proposed permits are subject to EPA and public review.

#### **IV. GENERAL PERMIT TEMPLATE USAGE**

The applicant has chosen to not use any model general permit templates for units S-37-1, 2, 3, 4, 6, 7, 11, 38 or 77.

#### **V. SCOPE OF EPA AND PUBLIC REVIEW**

Since the applicant has not requested to utilize any model general permit templates, the proposed permit in its entirety is subject to EPA and public review.

#### **VI. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES**

Since the applicant has not requested to utilize any model general permit templates, the proposed permit in its entirety is subject to EPA and public review.

#### **VII. APPLICABLE RULES THAT ARE FEDERALLY ENFORCEABLE**

District Rule 1070 Inspections (Amended 12/17/92) (Non SIP Replacement for Kern County Rule 107)

District Rule 1081 Source Sampling (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 108.1)

District Rule 1100 Equipment Breakdown (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 111)

District Rule 1160 Emission Statements (Adopted November 18, 1992)

District Rule 2010 Permits Required (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 201)

District Rule 2201 New and Modified Stationary Source Review Rule (Amended 4/25/02)

District Rule 2080 Conditional Approval (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 209)

District Rule 2520 Federally Mandated Operating Permits Sections 9.4.2, 9.5.1, 9.5.2, 9.6.1, 9.6.2, 9.8, 9.9.1, 9.9.2, 9.9.3, 9.9.4, 9.9.5, 9.10, 9.13.1, 9.14.1, 9.14.2, 9.17, and 10.0 (Adopted June 15, 1995)

District Rule 4101 Visible Emissions (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 401)

District Rule 4201 Particulate Matter Concentration (Amended December 17, 1992)  
(Non SIP replacement for Kern County Rule 404)

District Rule 4301 Fuel Burning Equipment (Amended December 17, 1992)

District Rule 4305 Boilers, Steam Generators, and Process Heaters (Amended December 19, 1996)

District Rule 4351 Boilers, Steam Generators, and Process Heaters - Reasonably Available Control Technology (Amended October 19, 1995)

District Rule 4451 Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants (Amended 12/17/92)

District Rule 4452 Pump and Compressor Seals at Petroleum Refineries and Chemical Plants (Amended 12/17/1992)

District Rule 4801 Sulfur Compounds (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 407)

Kern County Rule 407 Sulfur Compounds

40 CFR Part 60, Subpart J, Standards of Performance for Petroleum Refineries

40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Refineries

40 CFR Part 60, Subpart QQQ, Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

Petroleum Refinery MACT Standard

### **VIII. APPLICABLE REQUIREMENTS NOT FEDERALLY ENFORCEABLE**

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permit. The

terms and conditions that are part of the facility's Title V permit are designated as "Federally Enforceable through the Title V Permit".

The facility is subject to the following District rules, which are not currently Federally Enforceable:

A. District Rule 4102 - Nuisance (Amended 12/17/92)

For this facility, the following conditions that appear on the former non-Title V permit are based on the rules listed above and are not Federally Enforceable through the Title V Permit.

Permit Unit	Rule 4102	New TV Permit
Facility-wide	38	42
2	1	4

## IX. COMPLIANCE

A. Requirements Addressed by Model General Permit Templates

The applicant has chosen to not use any model general permit templates, therefore no requirements are addressed in this section.

B. Requirements Not Addressed by Model General Permit Templates

1. New and Modified Stationary Source Review Rule (District NSR Rule)

a. Refinery Crude Unit (Old PTO=1-5, TV PTO = 1-3)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map
---------------

Original Conditions from PTO 1-5	New TV Permit 1-3
1 and 2	9 and 10
3	3
4 and 5	7 and 8
6 through 11	11 through 16
12	18
13 through 20	22 through 29
21	19

b. 14 MMBtu/hr Rerun Unit (Old PTO=2-4, TV PTO=2-5)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map		
Original Conditions from PTO 2-4	New TV Permit 2-5	New Facility Wide Permit 0-1
1 and 2	4 and 5	
3 through 5	6 through 8	44 through 68
6	9	

c. 25 MMBtu/hr Unifier (Old PTO=3-3, TV PTO=3-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map	
Original Conditions from PTO 3-3	New TV Permit 3-2
1 through 6	18 through 23
7 through 9	8 through 10
10	24
11	25 through 29
12 and 13	30 and 31
14	4 and 11
15	16 and 2
16 and 17	33 and 34

d. Platformer Unit (Old PTO=4-6, TV PTO=4-5)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map		
Original Conditions from PTO 4-6	New TV Permit 4--5	New Facility Wide Permit 0-1
1	10	
2 and 3		44 through 68
4 through 14	15 through 25	
15 through 17	27 through 29	
18 through 20	31 through 33	

e. Watertube Boiler Unit (Old PTO=6-6, TV PTO=6-3)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map		
Original Conditions from PTO 6-6	New TV Permit 6-3	New Facility Wide Permit 0-1
1		26
2	10	
3 through 7	13 through 17	
8 through 10	19 through 21	
11	28 through 32	
12	22	
13 through 15	24 through 26	
16	18	

f. 65 MMBtu/hr Boiler (Old PTO=11-9, TV PTO=11-8)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map	
Original Conditions from PTO 11-9	New TV Permit 11-8
1 through 6	16 through 21
7	12
8	28
9	13
10	28
11 and 12	22 and 23
13 through 15	25 through 27
16 through 19	29 through 32
20	37 through 44
21 through 23	33 through 35

g. Solvent Unit (Old PTO=38-5, TV PTO=38-4)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map	
Original Conditions from PTO 11-9	New TV Permit 11-8
1 through 15	1 through 16
16	16, 21, and 26 through 96
17 and 18	17 and 18

h. Hydrotreater Unit (Old PTO=77-6, TV PTO=77-3)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO was addressed to define how NSR permit terms should be incorporated into the Title V permit.

The conditions from the most recent valid permit to operate have been transferred to the new TV operating permit, and have been renumbered as presented in the following table.

Condition Map	
Original Conditions from PTO 77-6	New TV Permit 77-3
1 through 9	1 through 9
10 and 11	26 and 27
12	29
13	10
14 through 18	30 through 34
19	40 through 44

20 through 23	35 through 38
24 and 25	11 and 12

2. District Rule 1070 - Inspections (as amended December 17,1992)

District Rule 1070 has been submitted to the EPA to replace Kern County Rule 107. The requirements of these rules are compared in the following table, showing that the District Rule 1070 is at least as stringent as Kern County Rule 107.

Comparison of District Rule 1070 and Kern County Rule 107

REQUIREMENT	District Rule 1070	Kern County Rule 107
Inspections shall be made by the enforcement agency for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations.	✓	✓
The District has authority to require record keeping, to make inspections and to conduct tests of air pollution sources.	✓	✓

Section 4.0 of this rule states District's authority to require record keeping, to make inspections, and to conduct tests of air pollution sources.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Kern County Rule 107
2	9
77	11,12

3. District Rule 1081 - Source Sampling

District Rule 1081 has been submitted to the EPA to replace Kern County Rule 108.1, which is SIP approved. District Rule 1081 is as stringent as Kern County Rule 108.1, as shown on Table 1.

Comparison of District Rule 1081 and Fresno County Rule 108.1

REQUIREMENTS	District Rule 1081	Kern County Rule 108.1
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REQUIREMENTS	District Rule 1081	Kern County Rule 108.1
Upon request of the APCO, the source shall provide info. And records to enable the APCO to determine when a representative sample can be taken.	✓	✓
The facility shall collect, have collected or allow the APCO to collect, a source sample.	✓	✓
The source shall have District personnel present at a source test.	✓	
The applicable test method, if not specified in the rule, shall be conducted in accordance with 40 CFR § 60, Appendix A .	✓	
Test procedures: 1) arithmetic mean of three runs 2) a scheduled source test may not be discontinued solely due to the failure to meet the applicable standard(s), and 3) arithmetic mean of two runs is acceptable if circumstances beyond owner or operator control occurs.	✓	

Sections 3.0, 4.0, 5.0, 6.0, and 7.0 of District Rule 1081 sets forth requirements for sampling facilities, collection of samples, test methods, test procedures, and administrative requirements.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	1081 Conditions
1	21, 22, 23, 27, 28, 29
2	n/a
3	22, 23, 24, 30, 31
4	17, 18, 22, 23, 24, 26
6	22, 23, 24, 25, 26, 27
11	26, 27, 32, 33, 34, 35, 36
38	4
77	30, 31, 35, 36, 37, 38, 39

4. District Rule 2520 - Federally Mandated Operating Permits (adopted 6/15/95)

Section 5.2 requires that permittees submit applications for Title V permit renewal at least six months prior to permit expiration. Condition 36 of the facility wide requirements assures compliance with this requirement.

Section 9.3.2 states that periodic monitoring is required if no other applicable requirements are required to assure compliance. Monitoring is required for the permit units. The following table shows permit units and conditions requiring periodic monitoring.

Permit Unit	Rule 2520 Section 9.3.2
1	4, 5, 6, 17, 31, 33, 34
2	n/a
3	4, 5, 6, 7
4	4, 11, 12, 13, 30
6	4, 7, 8, 9, 27, 29, 31, 32
11	4, 5, 6, 24, 36, 38, 40, 41
38	23, 24, 25
77	15, 17, 18, 19, 25, 28, 39, 41, 43, 44

Sections 9.4.1 and 9.4.2 contain requirements to incorporate all applicable record keeping requirements into the Title V permit, specific records of any required monitoring, and the retention of all required monitoring data and support information for five years. The requirements to keep specific monitoring records and retain records for five years are stated in condition 8 and 9 of the facility wide requirements.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 2520 Section 9.4.2
1	1, 2, 21, 32
2	1, 2, 3
3	1, 2, 17, 26, 27, 28, 29
4	1, 2, 26
6	1, 2, 30
11	1, 2, 39
38	20, 74
77	14, 42

Section 9.5 contains requirements for the submittal of reports for monitoring results at least every six months and prompt recording of deviations from permitting requirements, including those attributable to upset conditions. All required reports must be certified by the responsible

official. These requirements are stated in conditions 10 and 11 of the facility wide requirements.

Section 9.7 states that the Title V permit also must contain a severability clause in case of a court challenge; the severability clause is in condition 12 of the facility wide requirements.

Section 9.8 contains following provisions for the Title V permit:

- 1) The permittee must comply with all permit conditions;
- 2) That the permitted activity would have to be reduced to comply with the permit conditions should not be a defense in an enforcement action,
- 3) That the permit may be revoked, modified, reissued, or reopened for cause,
- 4) That the Title V permit does not reflect any property rights, and
- 5) That the permittee will furnish the District with any requested information to determine compliance.

Compliance with this section of Rule 2520 will be assured by conditions 5 and 13 through 16 of the facility wide requirements.

Section 9.9 requires the permittee to pay annual permit fees and applicable fees described in District Rules 3010, 3030, 3050, 3080, 3090, 3110, and 3120. This requirement is stated in condition 17 of the facility wide requirements.

Section 9.12.2 states that all terms and conditions of a permit are required pursuant to the CAA, including provisions designed to limit potential to emit, are enforceable by the EPA and Citizens under the CAA. This requirement is stated in condition 5 of the facility wide.

Section 9.13.1 requires that any report or document submitted under a permit requirement or following a request for information by the District or EPA to contain certification by a responsible official to its truth, accuracy, and completeness. Compliance with this section will be assured by condition 28 of the facility wide requirements.

Section 9.13.2 presents inspection and entry requirements that allow an authorized representative of the District to enter a permittee's premises to inspect equipment, operations, work practices, permits on file, and to sample substances or monitor parameters for the purpose of assuring compliance with the permit requirements. Compliance with these

requirements will be assured by conditions 18, 19, 20 and 21 of the facility wide requirements (S-1751-0-1).

Section 9.16 requires the permittee to submit certification of compliance with the terms and standards of Title V permits to the EPA and the District annually (or more frequently as required by the applicable requirement of the District). Condition 35 of the facility wide requirements assures compliance with this requirement.

Section 10.0 requires that any application form, report or compliance certification submitted pursuant to these regulations to contain certification of truth, accuracy, and completeness by a responsible official. Compliance with this section will be assured by condition 28 of the facility wide requirements.

5. District Rule 4201 - Particulate Matter Concentration

Section 3.0 of District Rule 4201 requires emissions to be at or below 0.1 grains of particulate matter per dry standard cubic foot of exhaust gas, and specifies the test methods.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4201
1	3
2	n/a
3	3
4	3
6	3
11	3
38	22
77	16

6. District Rule 4301 – Fuel Burning Equipment

Section 5.1 prohibits discharging into the atmosphere combustion contaminants exceeding in concentration at the point of discharge, 0.1 grain per cubic foot of gas calculated to 12% of carbon dioxide at dry standard conditions.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Section 5.2.1 prohibits the building, erection, installation or expansion of any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed 200 pounds per hour of sulfur compounds, calculated as sulfur dioxide (SO<sub>2</sub>).

Compliance With SO<sub>x</sub> Limits - District Rule 4301

#### USING CERTIFIED NATURAL GAS FUELS

PUC regulated natural gas has a maximum sulfur content of 0.017% by weight [Public Utilities Code General Order 58-B]. FERC gas has an even lower sulfur content of ~ 0.0026%. The maximum sulfur concentration allowed under Rule 4301 for units subject to this template will be:

$$\frac{\left(100 \frac{\text{lb } S}{\text{hr}}\right) \left(\frac{453.59 \text{ g } CH_4}{\text{lb } CH_4}\right) \left(\frac{23.7 \text{ L } CH_4}{\text{gmol } CH_4}\right) \left(\frac{0.00105 \text{ MMBtu}}{\text{scf } CH_4}\right)}{\left(\frac{16.04 \text{ g } CH_4}{\text{gmol } CH_4}\right) \left(\frac{28.317 \text{ L } CH_4}{\text{scf } CH_4}\right) \left(\frac{100 \text{ MMBtu}}{\text{hr}}\right)} = \left(\frac{0.025 \text{ lb } S}{\text{lb } CH_4}\right) \approx 2.5\%$$

where:

$$100 \frac{\text{lb } S}{\text{hr}} = 200 \frac{\text{lb } SO_2}{\text{hr}} = \text{emission limit}$$

$$\frac{453.59 \text{ g } CH_4}{\text{lb } CH_4} = \text{conversion factor}$$

$$23.7 \frac{\text{L}}{\text{gmol}} = \frac{(288.71\text{K}) \left(22.4 \frac{\text{L}}{\text{gmol}}\right)}{273.15\text{K}} = \text{molar volume of an ideal gas corrected to}$$

standard conditions (60° F, 14.7 psi) per Charles' Law

$$\frac{0.00105 \text{ MMBtu}}{\text{scf } CH_4} = \text{heating value for natural gas}$$

$$\frac{16.04 \text{ g } CH_4}{\text{gmol } CH_4} = \text{molecular weight of gaseous fuel}$$

$$\frac{28.317 \text{ L } CH_4}{\text{scf } CH_4} = \text{conversion factor}$$

$$100 \frac{\text{MMBtu}}{\text{hr}} = \text{maximum heat input allowed by this template}$$

The preceding calculation shows that, for a 100 MMBtu/hr boiler, an emission rate of 200 lb SO<sub>2</sub>/hr corresponds to 2.5% by weight sulfur content. Since the maximum sulfur content of PUC or FERC regulated natural gas is far below this limit (0.017%), units using PUC or FERC regulated natural gas will comply with this requirement.

#### USING NON-CERTIFIED GASEOUS FUELS

The non-certified gaseous fuel combusted in refinery processes all comes from unit S-37-78. Unit 78 has a sulfur scrubbing system and is equipped with a continuous sulfur monitor. The majority of the sulfur contained within the refinery gas is in the form of H<sub>2</sub>S. The sulfur monitor produces a sulfur concentration in ppmv.

The limit determined above for utility grade gaseous fuels is 2.5% sulfur by weight. This value is conservative for refinery gas that may have a lower heating value and higher exhaust volume flow rate than pure methane. Assuming the hhv of the refinery gas is a conservatively low 800 Btu/scf, which is the lowest heating value that produces a stable flame in a boiler, the fuel sulfur limit can be determined by multiplying the utility grade limit above of 2.5% by  $(800/1,000) = 2\%$ . Therefore, in order to assure compliance with Rule 4301, the sulfur content of the non-certified gaseous fuel may not exceed 2% by weight.

The limit determined for non-certified gaseous fuels is 2% sulfur by weight. We are interested in converting this value into ppmv in order to make use of the sulfur monitor on unit S-37-78.

The molecular weight of methane is 16 g/mole.  
The most common form of sulfur in refinery gas is H<sub>2</sub>S.  
The molecular weight of H<sub>2</sub>S is 34 g/mole  
The atomic weight of S is 32 g/mole

Given 100 grams of refinery gas, assuming 2.0% by weight is S. Since each sulfur is hooked to 2 hydrogens, the % weight of H<sub>2</sub>S is  $18/32 \times 2.0 = 2.25\%$ .

Therefore, the number of moles of each compound in the 100 grams of gas is:

$2.25 \text{ g} \div 34 \text{ g/mole} = 0.066 \text{ moles.}$   
 $97.75 \text{ g} \div 16 \text{ g/mole} = 6.11 \text{ moles.}$

Using the ideal gas law, considering that molecules of various gaseous compounds occupy the similar volumes, the volumetric relationship between sulfur and gas is  $0.125 \div (0.125 + 6.11) = 0.020$ , or 2% by volume. Employing a conservative factor of safety of 2, the units may be allowed to safely burn refinery gas with a sulfur content of 0.010, or 1% by volume.

Therefore, noncertified gaseous fuel with a sulfur concentration of 10,000 ppmv will conservatively meet the requirements of Rule 4301.

#### USING CERTIFIED DIESEL FUEL

Diesel-fired units are limited to the combustion of fuel with a sulfur content of less than 0.5%. The following demonstration illustrates, by solving for fuel sulfur content at the Rule 4301 emission limit, that the proposed limitation is more stringent than District Rule 4301.

$$\frac{\left(100 \frac{lb \cdot S}{hr}\right) \left(\frac{0.137 MMBtu}{1 \text{ gallon fuel oil}}\right)}{\left(\frac{7.05 lb \text{ fuel oil}}{1 \text{ gallon fuel oil}}\right) \left(100 \frac{MMBtu}{hr}\right)} = \frac{0.019 lb S}{lb \text{ fuel oil}} \cong 2\% \text{ weight sulfur content}$$

where:

$$\left(100 \frac{lb \cdot S}{hr}\right) = \left(200 \frac{lb \cdot SO_2}{hr}\right) = \text{District Rule 4301, 5.2.1 emission limit}$$

$$\left(\frac{7.05 lb \text{ fuel oil}}{1 \text{ gallon fuel oil}}\right) \text{ the density of distillate oil}$$

$$\left(100 \frac{MMBtu}{hr}\right) = \text{maximum rated heat input for this template}$$

$$\left(\frac{0.137 MMBtu}{1 \text{ gallon fuel oil}}\right) = \text{higher heating value of distillate oil}$$

The preceding analysis shows that the allowable fuel sulfur content at District Rule 4301 maximum emission limit and at the maximum heat input of this template, is 2% weight sulfur content. This demonstrates that the proposed fuel sulfur limit, 0.5% by weight sulfur content, is clearly more stringent.

Therefore, in order to ensure compliance with Rule 4301, the relevant fuel burning equipment shall either burn PUC or FERC regulated natural gas, certified diesel fuel with a sulfur content of no more than 0.5% by weight, or refinery gas with a sulfur content of no more than 20,000 ppmv or 2% by weight according to the H<sub>2</sub>S Monitor installed on unit S-37-78.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4301, 5.2.1
1	4, 5
2	n/a
3	5, 7
4	11, 13
6	7, 9
11	4, 6
38	23, 25
77	17, 19

Section 5.2.3 prohibits the building, erection, installation or expansion of any non-mobile fuel burning equipment unit unless the discharge into the atmosphere of contaminants will not and does not exceed ten (10) pounds per hour of combustion contaminants as defined in Rule 1020 (Definitions) and derived from the fuel.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4301, 5.2.3
1	3
2	n/a
3	3
4	3
6	3
11	3
38	22
77	16

7. District Rule 4305 – Boilers, Steam Generators and Process Heaters

Section 5.1 requires NO<sub>x</sub> emissions to be limited to the following:

0.052 lb NO<sub>x</sub>/MMBtu or 40 ppmv (corrected to 3% O<sub>2</sub>) for liquid fuel fired boilers and steam generators, or

0.036 lb NO<sub>x</sub>/MMBtu or 30 ppmv (corrected to 3% O<sub>2</sub>) for gaseous fuel fired boilers and steam generators.

Heat input weighted average of limits for boilers and steam generators fired on combination of fuels.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4305, 5.1
1	11, 12
2	n/a
3	13, 14, 20, 21
4	6,7
6	14
11	8
38	12
77	7

Section 5.4.2 requires that the owner of any unit equipped with NO<sub>x</sub> reduction technology shall either install and maintain continuous emissions monitoring equipment for NO<sub>x</sub>, CO and oxygen, or install and maintain APCO-approved alternate monitoring.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4305, 5.4.2
1	15, 16, 18
2	n/a
3	n/a
4	28, 29, 30, 31
6	n/a
11	22, 23, 25
38	n/a
77	26, 27, 29

Section 6.3.1 requires each unit subject to the NO<sub>x</sub> requirements to be tested to determine compliance with the applicable requirements not less than once every 12 months. Gaseous fuel fired units demonstrating

compliance on two consecutive compliance source tests may defer the following source test for up to thirty-six months.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4305, 6.3.1
1	19, 20, 24, 25, 26, 30
2	n/a
3	8, 9, 10, 11, 12, 13
4	5, 6, 19, 20, 21
6	5, 6, 19, 20, 21
11	7, 29, 30, 31
38	n/a
77	25, 32, 33, 34

Section 6.3.2 specifies that in lieu of compliance with Section 6.3.1, compliance with the applicable limits shall be demonstrated by submittal of annual emissions test results to the District from a unit or units that represents a group of units under specific conditions.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4305, 6.3.2
1	31, 32, 33
2	n/a
3	25, 26, 27, 28
4	n/a
6	28, 29, 30, 31
11	37, 38, 39, 40
38	n/a
77	40, 41, 42, 43

8. District Rule 4351 – Boilers, Steam Generators, and process Heaters – Reasonably Available Control Technology

Section 5.1 requires NO<sub>x</sub> emissions to be limited to the following:

	Gaseous Fuel	Distillate Oil	Residual Oil	Crude Oil
Units Except Natural &	95 ppmv or 0.10	115 ppmv or 0.15 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu

Induced Draft Units	lb/MMBtu			
Natural & Induced Draft Units	147 ppmv or 0.18 lb/MMBtu	155 ppmv or 0.20 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4351, 5.1
1	11, 12
2	n/a
3	13, 14, 20, 21
4	6, 7, 15, 16
6	5, 6, 13, 17
11	8, 9, 17
38	n/a
77	7

Section 5.6.1 requires that owner of any unit that simultaneously fires combinations of different fuels shall install and maintain totalizing mass or volumetric flow meters in each fuel line, and requires the owner of any unit equipped with NO<sub>x</sub> control technology to install and maintain appropriate provisions to monitor the operational characteristics of the NO<sub>x</sub> control system.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4351, 5.6.1
1	10
2	n/a
3	15, 16
4	8, 9
6	n/a
11	10, 11
38	n/a
77	n/a

Section 5.6.2 requires the owner of any unit equipped with NO<sub>x</sub> reduction control technology to install and maintain appropriate provisions to monitor the operational characteristics of the NO<sub>x</sub> control system.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4351, 5.6.2
1	15, 16, 18
2	n/a
3	n/a
4	28, 29, 31
6	n/a
11	22, 23, 25
38	n/a
77	26, 27, 29

Section 6.3 requires that units be tested to determine compliance with the applicable emissions requirements not less than once every 12 months in which annual fuel consumption exceeds 9 billion Btu's. Section 6.2 specifies the source testing methods to be used to demonstrate compliance.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	Rule 4351, 6.3
1	19, 20, 24, 25, 26, 30
2	n/a
3	8, 9, 10, 11, 12
4	5, 19, 20, 21, 25
6	19, 20, 21, 26
11	29, 30, 31, 35
38	n/a
77	25, 32, 33, 34, 38

9. District Rule 4451 – Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants

a. Units -1, -2, -3, -4, -6, -11, -38 and -77

All of the requirements for Rule 4451 are included in the facility-wide requirements, as discussed in the facility-wide compliance section.

In addition, the following conditions require compliance with Rule 4451.

Permit Unit	Rule 4451
1	7
2	6, 8
3	18
4	n/a
6	11
11	14
38	10, 19
77	1, 2, 20, 21

10. District Rule 4452 - Pump and Compressor Seals at Petroleum Refineries and Chemical Plants

- a. Units -1, -2, -3, -4, -6, -11, -38 and -77

All of the requirements for Rule 4452 are included in the facility-wide requirements, as discussed in the facility-wide compliance section.

In addition, the following conditions require compliance with Rule 4452.

Permit Unit	Rule 4452
1	8
2	7, 8
3	19
4	14
6	12
11	15
38	11, 19
77	1, 3

11. District Rule 4801, Sulfur Compounds

District Rule 4801 has been submitted to the EPA to replace Kern County Rule 407 which is in the SIP. District Rule 4801 is as stringent as Kern County Rule 407, as shown in the following table.

Comparison of District Rule 4801 and Kern County Rule 407

REQUIREMENT	District Rule 4801	Kern County 407
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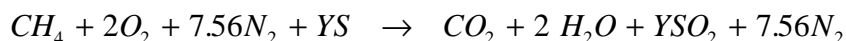
A person shall not discharge into the atmosphere sulfur compounds exceeding in concentration at the point of discharge 0.2 percent by volume calculated as sulfur dioxide on a dry basis averaged over 15 consecutive minutes.	✓	✓
EPA Method 8 and ARB Method 1-100 shall be used to determine such emissions.	✓	

#### Compliance with SO<sub>x</sub> Limits – Rule 4801

District Rule 4801 limits the emission of sulfur compounds to 0.2% by volumes (2000 ppmv) calculated as SO<sub>2</sub>, on a dry basis averaged over 15 minutes. The following demonstration illustrates that the proposed requirements are more stringent than District Rule 4801.

#### USING PUC OR FERC CERTIFIED NATURAL GAS

PUC regulated natural gas has a maximum sulfur content of 0.017% by weight [Public Utilities Code General Order 58-B]. FERC regulated gas has a lower maximum sulfur content ~ 0.0026%. Assuming 0% excess air in the exhaust stream corresponds with maximum SO<sub>x</sub> emissions concentration (neglecting NO<sub>x</sub> and SO<sub>x</sub> relative to SO<sub>2</sub> in the exhaust), and that CH<sub>4</sub> represents a typical gaseous fuel, the combustion equation is:



where:

Y = moles of sulfur in the fuel.

Solving an expression for the fraction of SO<sub>2</sub> in the dry exhaust by volume gives:

$$\frac{Y}{1 + 7.56} = 0.002 \Rightarrow Y = 0.01712$$

where:

Y = mole fraction of S per mole of CH<sub>4</sub> combusted

1 = one mole of CO<sub>2</sub>

7.56 = number of moles of N<sub>2</sub>

0.002 = 0.2% by volume = 2000 ppmv limit

Use Y to calculate the weight fraction of S in one mole of CH<sub>4</sub>:

$$\frac{(0.01712)(32.06)}{(16.04) + (0.01712)(32.06)} = 0.033 \Rightarrow 3.3\% \text{ S by weight in the fuel.}$$

where:

32.06 = molecular weight of sulfur (S<sub>2</sub>)

16.04 = molecular weight of methane (CH<sub>4</sub>)

0.033 = fraction of S by weight in the fuel

The preceding calculation shows that an exhaust concentration of 0.2% by volume corresponds to a gaseous fuel sulfur content by weight of 3.3%. Therefore, the use of PUC or FERC regulated gas with a maximum sulfur content of 0.017% will assure compliance with this requirement.

#### USING CERTIFIED DIESEL FUEL

Diesel -fired units are limited to the combustion of distillate fuel with a sulfur content less than 0.5%.

$$\frac{\left(\frac{142(0.5) \text{ lb } SO_x}{10^3 \text{ gal diesel}}\right) \left(\frac{23.7 \text{ L } SO_2}{\text{gmol } SO_2}\right) \left(\frac{0.035315 \text{ dscf } SO_2}{\text{L } SO_2}\right) \left(\frac{453.59 \text{ g } SO_2}{\text{lb } SO_2}\right)}{\left(\frac{9190 \text{ dscf exhaust}}{\text{MMBtu}}\right) \left(\frac{64.14 \text{ g } SO_2}{\text{gmol } SO_2}\right) \left(\frac{137 \text{ MMBtu}}{10^3 \text{ gal diesel}}\right)} = \left(\frac{0.0003 \text{ dscf } SO_2}{\text{dscf exhaust}}\right) < \left(\frac{0.002 \text{ dscf } SO_2}{\text{dscf exhaust}}\right)$$

where:

S ≡ weight % of sulfur in the oil = 0.5 = fuel sulfur limit this template

$$\frac{142 \text{ S lb } SO_2}{10^3 \text{ gal}} = \text{uncontrolled emission factor for } SO_2$$

$$23.7 \frac{\text{L}}{\text{gmol}} = \frac{(288.71 \text{ K}) \left(22.4 \frac{\text{L}}{\text{gmol}}\right)}{273.15 \text{ K}} = \text{molar volume of an ideal gas corrected to}$$

District

standard conditions (60° F, 14.7 psi) per Charles' Law

$$0.035315 \frac{\text{ft}^3}{\text{L}} = \text{conversion factor}$$

$$453.59 \frac{\text{g}}{\text{lb}} = \text{conversion factor}$$

$$9190 \frac{dscf}{MMBtu} = \text{F-factor, } F_d, \text{ for oil}$$
$$64.14 \frac{g \cdot SO_2}{gmol} = \text{molecular weight, } SO_2$$
$$\frac{137,000 \text{ Btu}}{1 \text{ gal diesel}} = \text{higher heating value of distillate oil}$$
$$0.002 \frac{parts \cdot SO_2}{parts \cdot exhaust} = \text{Rule 4801}$$

The preceding calculation shows that, for diesel fired units, an emission concentration of 0.03% by volume is expected; this concentration is only 16.7% of that allowed by Rule 4801.

#### USING NON-CERTIFIED GASEOUS FUELS

The limit determined above for gaseous fuels that demonstrates compliance with this Rule is 3.3% sulfur by weight. This number is conservative for field or refinery gas that may have a lower heating value and higher exhaust volume flow rate than pure methane. Assuming the hhv of the refinery gas is a conservatively low 800 Btu/scf, which is the lowest heating value that produces a stable flame in a boiler, the fuel sulfur limit equating to 0.2% can be determined by multiplying the 3.3% by  $(800/1,000) = 2.6\%$ . Therefore, in order to assure compliance with Rule 4801, the sulfur content of the non-certified gaseous fuel may not exceed 2.6% by weight.

The limit determined for non-certified gaseous fuels is 2.6% sulfur by weight. We are interested in converting this value into ppmv in order to make use of the sulfur monitor on unit 78.

The molecular weight of methane is 16 g/mole.

The most common form of sulfur in refinery gas is  $H_2S$ .

The molecular weight of  $H_2S$  is 34 g/mole

The atomic weight of S is 32 g/mole

Given 100 grams of refinery gas, assuming 2.6% by weight is S. Since each sulfur is hooked to 2 hydrogens, the % weight of  $H_2S$  is  $18/34 \times 2.6 = 1.38\%$ .

Therefore, the number of moles of each compound in the 100 grams of gas is:

$$1.38 \text{ g} \div 34 \text{ g/mole} = 0.0406 \text{ moles.}$$

$$98.62 \text{ g} \div 16 \text{ g/mole} = 6.164 \text{ moles.}$$

Using the ideal gas law, considering that molecules of various gaseous compounds occupy the similar volumes, the volumetric relationship between sulfur and gas is  $0.163 \div (0.163 + 6.07) = 0.026$ , or 2.6% by volume

Using noncertified gaseous fuel with a sulfur concentration of 26000 ppmv will meet the requirements of Rule 4801. However, since compliance with Rule 4301 will require a sulfur concentration not to exceed 20000 ppmv or 2% by volume, the Rule 4301 condition will be used to conservatively demonstrate compliance with Rule 4801.

Therefore, taking the more stringent limitation discussed in Rule 4301 above, in order to ensure compliance with Rule 4801 as well, the relevant fuel burning equipment shall either burn PUC or FERC regulated natural gas, certified diesel fuel with a sulfur content of no more than 0.5% by weight, or refinery gas with a sulfur content of no more than 10,000 ppmv or 1% by weight according to the H<sub>2</sub>S Monitor installed on unit S-37-78.

Permit Unit	District Rule 4801 Kern County Rule 407
1	5, 6
2	n/a
3	6, 7
4	12, 13
6	8, 9
11	5, 6
38	24, 25
77	18, 19

12. 40 CFR Part 60, Subpart J - Standards of Performance for Petroleum Refineries

The provisions of this subpart are applicable to petroleum refineries that utilize fuel gas combustion devices which are equipment, such as process heaters, boilers and flares that combust fuel gas, that are constructed, modified or reconstructed after June 11, 1973.

In 1989, the facility applied to modify that solvent unit, changing equipment, triggering NSPS, and a 4001 condition was placed on their permit 38-4. Therefore, this unit is subject to Subpart J. The other units are not subject to Subpart J.

Section 60.104(a)(1) requires that any fuel gas combustion device shall not burn any fuel gas hydrogen sulfide (H<sub>2</sub>S) in excess of 0.10 gr/dscf (230 mg/dscm).

Section 60.105 requires the installation of a continuous monitoring systems to monitor SO<sub>2</sub> emissions into the atmosphere or the concentration of H<sub>2</sub>S in the fuel gas being burned.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	40 CFR 60.104 and 105
1	n/a
2	n/a
3	n/a
4	n/a
6	n/a
11	n/a
38	6,8, 26, 27
77	n/a

13. 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Refineries

The provisions of this subpart are applicable to compressors and equipment assembled to produce intermediate or final products from petroleum at refineries that are constructed, modified or reconstructed after January 4, 1983.

In 1989, the facility applied to modify that solvent unit, changing equipment, triggering NSPS, and a 4001 condition was placed on their permit 38-4. Therefore, this unit is subject to Subpart GGG. The other units are not subject to Subpart GGG.

These requirements are included in the conditions of the following permit units to ensure compliance with this rule.

Permit Unit	40 CFR 60 Subpart GGG
1	n/a
2	n/a
3	n/a
4	n/a

6	n/a
11	n/a
38	28 through 96
77	n/a

14. 40 CFR Part 60, Subpart QQQ - Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems

The provisions of this subpart are standards of performance for VOC emissions from individual drain systems, oil-water separators, and closed vent systems and control devices in petroleum refinery wastewater systems.

These requirements are included in the facility-wide requirements.

15. Petroleum Refinery MACT Standard

The maximum achievable control technology (MACT) standard for petroleum refineries stems from the Clean Air Act Amendments of 1990. Under the Act, emissions of 189 hazardous air pollutants (HAPs), also known as air toxics, must be regulated. Refineries that are major HAP sources with a potential to emit > 10 tons per year (tpy) of any of the 189 HAPs or potential to emit > 25 tpy of total HAPs need to comply with the requirements of the MACT standard.

Kern Oil Refinery does not have the potential to emit either 10 tpy of any of the 189 HAPs or 25 tpy of total HAPs and therefore is not subject to the requirements of the Petroleum Refinery MACT Standard.

## **X. PERMIT SHIELD**

A permit shield legally protects a facility from enforcement of the shielded regulations when a source is in compliance with the terms and conditions of the Operating Permit. Since the applicant has not requested to use templates, no permit shield will be granted.

<b>Flares</b>
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**I. EQUIPMENT LISTING**

The following is a list of equipment included in this category:

Permit Unit	Equipment Description
S-37-7-2	112,500 BTU/HR FLARE WITH STEAM ASSIST

**II. GENERAL PERMIT TEMPLATE USAGE**

The applicant has chosen not to use any model general permit Templates for the equipment listed above.

**III. SCOPE OF EPA AND PUBLIC REVIEW**

Kern Oil & Refining Company has not requested to utilize model general permit templates for this type of equipment. All terms and conditions from the proposed permits are subject to EPA and public review.

**IV. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES**

The applicant has not proposed to utilize any model general permit templates for this type of equipment. All applicable requirements are explicitly addressed in the permit outside of the general permit templates.

**V. APPLICABLE REQUIREMENTS NOT ADDRESSED BY GENERAL PERMIT TEMPLATES**

District Rule 2201	District New And Modified Stationary Source Review Rule (amended April 25, 2002)
District Rule 2520	Federally Mandated Operating Permits (amended June 21, 2001)
District Rule 4001	New Source Performance Standards (amended April 14, 1999)
District Rule 4101	Visible Emissions (amended November 15, 2001)

District Rule 4311	Flares (adopted June 20, 2002)
District Rule 4451	Valves, Pressure Relief Valves, Flanges, Threaded Connections And Process Drains At Petroleum Refineries And Chemical Plants (amended December 17, 1992)
District Rule 4452	Pump And Compressor Seals At Petroleum Refineries And Chemical Plants (amended December 17, 1992)
District Rule 4454	Pump And Compressor Seals At Petroleum Refineries And Chemical Plants (amended December 17, 1992)
40 CFR Part 60 Subpart A	General Provisions
40 CFR Part 60, Subpart J	Standards of Performance for Petroleum Refineries
40 CFR Part 60, Subpart GGG	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

## **VI. REQUIREMENTS NOT FEDERALLY ENFORCEABLE**

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permits. The terms and conditions that are part of the facility's Title V permit are designated as Federally Enforceable Through Title V Permit.

There are no requirements not Federally Enforceable.

## **VII. COMPLIANCE**

### **A. Requirements Addressed by Model General Permit Templates**

The applicant is not proposing to use a general permit template for this category of permit units. Compliance with all federally applicable requirements will be addressed in the following Section of this engineering evaluation.

**B. Requirements Not Addressed by Model General Permit Templates**

**1. New and Modified Stationary Source Review Rule**

Permit unit S-37-7-2 was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

a. Flare (S-37-7-2)

- Condition 1 of the PTO has been subsumed by condition 22 of the facility wide requirements for this permit unit.
- Condition 2 of the PTO has been subsumed by conditions 1 through 4, and 8 through 13 of the requirements for this permit unit.

**2. District Rule 2520, 9.3.2 and 9.4.2**

Section 9.3.2 requires that periodic monitoring be performed if none is associated with a federally enforceable requirement to assure compliance.

a. Flare (S-37-7-2)

- Periodic monitoring required by this section is supported by permit conditions #2 and #8. These conditions require additional visible emissions monitoring by the source, and require the flare be operated according to manufacturer's specifications to assure compliance with 40 CFR 60.18. Flares that emit over 20 tons of VOC per year are subject to more stringent monitoring. This unit's emission are below this threshold.

Section 9.4.2 requires all records be maintained for at least five years.

a. Flare (S-37-7-2)

- Facility wide requirements conditions 8 and 9 of the facility wide requirements will assure that all records be maintained for at least five years.

**3. District Rule 4001, New Source Performance Standards**

This rule incorporates the New Source Performance Standards from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR). All new sources of air pollution and modification of existing sources of air pollution shall comply with the standards, criteria, and requirements set forth therein.

- a. Flare (S-37-7-2)
  - Conditions 14 through 16 of the requirements for this permit unit assures compliance with this rule.

**4. District Rule 4101, 5.0**

Section 5.0 requires that no air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater by using EPA method 9.

a. Flare (S-37-7-2)

- The visible emission limit is stipulated in the facility wide requirements condition #22.

**5. District Rule 4311, 5.0 and 6.0**

The following is a streamlining of multiple applicable requirements of District Rule 4311 and 40 CFR 60, Subpart A, § 60.18 General Control Device Requirements.

<b>Table 2: Side-by-Side Comparison of District Rule 4311 to 40 CFR 60, Subpart A, § 60.18</b>			
<b>Type of Requirement</b>	<b>District Rule 4311 (unless otherwise noted)</b>	<b>Subpart A, § 60.18</b>	<b>Alternate Proposed Requirement</b>
Monitoring	Rule 4101 (5.1) A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is: As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.	(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.	No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.
Monitoring	N/A	(f)(1) Reference Method 22 of Appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22 of Appendix A to this part.	Visible emissions monitoring shall be conducted at least annually, using EPA Method 22.
Monitoring	(5.2) The flame shall be present at all times when combustible gases are vented through the flare.	(c)(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).	The flame shall be present at all times when combustible gases are vented through the flare.
Monitoring	N/A	(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.	Previously addressed.
Monitoring	(5.3) The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares.	(f)(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.	The outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares.

**Table 2: Side-by-Side Comparison of District Rule 4311 to  
40 CFR 60, Subpart A, § 60.18**

<b>Type of Requirement</b>	<b>District Rule 4311 (unless otherwise noted)</b>	<b>Subpart A, § 60.18</b>	<b>Alternate Proposed Requirement</b>
Monitoring	(5.4) Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated.	N/A	Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated.
Monitoring	(5.5) Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging.	N/A	Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging.
Monitoring	(5.6) Open flares (air-assisted, steam-assisted, or non-assisted) in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18.	N/A	Open flares in which the flare gas pressure is less than 5 psig shall be operated in such a manner that meets the provisions of 40 CFR 60.18.
Monitoring	N/A	(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.	The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site.
Monitoring	N/A	(c)(3)(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, $V_{max}$ , as determined by the following equation: $V_{max} = (XH_2 - K1) * K2$ Where: $V_{max}$ = Maximum permitted velocity, m/sec. $K1$ = Constant, 6.0 volume-percent hydrogen. $K2$ = Constant, 3.9(m/sec)/volume-percent hydrogen. $XH_2$ = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77.	The flare shall have a diameter of 3 inches or greater, have a minimum hydrogen content of 8.0% by volume, and be designed for and operated with an exit velocity less than 122 ft/sec and less than the velocity $V_{max}$ , as determined by the equation specified in paragraph 40 CFR 60.18 (c)(3)(i)(A).

**Table 2: Side-by-Side Comparison of District Rule 4311 to  
40 CFR 60, Subpart A, § 60.18**

<b>Type of Requirement</b>	<b>District Rule 4311 (unless otherwise noted)</b>	<b>Subpart A, § 60.18</b>	<b>Alternate Proposed Requirement</b>
Monitoring	N/A	(f)(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.	The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.
Monitoring	N/A	(c)(3)(ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.	Air-assisted or steam-assisted flares shall only be used when the net heating value of the gas being combusted is 300 Btu/scf or greater. Nonassisted flares shall only be used when the net heating value of the gas being combusted is 200 Btu/scf or greater.
Monitoring	N/A	(c)(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4) (ii) and (iii).	Steam-assisted and nonassisted flares shall be operated with an exit velocity, less than 60 ft/sec, except as provided in 40 CFR 60.18 (c)(4)(ii) and (iii).
Monitoring	N/A	(c)(4)(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).	Steam-assisted and nonassisted flares may be operated with an exit velocity equal to or greater than 60 ft/sec, but less than 400 ft/sec, if the net heating value of the gas being combusted is greater than 1,000 Btu/scf.
Monitoring	N/A	(c)(4)(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, $V_{max}$ , as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.  (f)(5) The maximum permitted velocity, $V_{max}$ , for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation. $\text{Log}_{10}(V_{max}) = (H_T + 28.8) / 31.7$ $V_{max} = \text{Maximum permitted velocity, M/sec}$ 28.8 = Constant 31.7 = Constant $H_T$ = The net heating value as determined in paragraph (f)(3).	Steam-assisted and nonassisted flares may be operated with an exit velocity less than the velocity $V_{max}$ , as determined by the methods specified in 40 CFR 60.18 (f)(5), and less than 400 ft/sec.

**Table 2: Side-by-Side Comparison of District Rule 4311 to  
40 CFR 60, Subpart A, § 60.18**

Type of Requirement	District Rule 4311 (unless otherwise noted)	Subpart A, § 60.18	Alternate Proposed Requirement
Monitoring	N/A	(c)(5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, $V_{max}$ , as determined by the method specified in paragraph (f)(6). (f)(6) The maximum permitted velocity, $V_{max}$ , for air-assisted flares shall be determined by the following equation. $V_{max} = 8.706 + 0.7084 (H_T)$ $V_{max}$ = Maximum permitted velocity, m/sec 8.706 = Constant 0.7084 = Constant $H_T$ = The net heating value as determined in paragraph (f)(3).	Air-assisted flares shall be operated with an exit velocity less than the velocity $V_{max}$ as determined by the methods specified in 40 CFR 60.18 (f)(6).
Monitoring	N/A	(c)(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.	Addressed in the TQF.
Monitoring	N/A	(f)(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation: $H_T = \sum C_i H_i$ , from $i = 1$ to $n$ where: $H_T$ =Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C; $K$ = Constant, $1.740 \times 10^{-7} (1)/(\text{ppm}) (\text{g mole})/(\text{scm}) (\text{MJ})/(\text{kcal})$ where the standard temperature for (g mole) / (scm) is 20° C $C_i$ = Concentration of sample component $i$ in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Re-approved 1994)(Incorporated by reference as specified in § 60.17); and $H_i$ = Net heat of combustion of sample component $i$ , kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95. (incorporated by reference as specified in § 60.17) if published values are not available or cannot be calculated.	The net heating value of the gas being combusted the flare shall be calculated pursuant to 40 CFR 60.18(f)(3) or by using EPA Method 18, ASTM D1946, and ASTM D2382 if published values are not available or cannot be calculated.
Administrative	(6.1.1) Upon request, the operator of flares that are subject to Section 5.6 shall make available to the APCO the compliance determination records that demonstrate compliance with the provisions of 40 CFR 60.18, (c)(3) through (c)(5).	N/A	The permittee shall maintain, and make available for District inspection, all records of required monitoring data and support information for inspection at any time for a period of five years.

**Table 2: Side-by-Side Comparison of District Rule 4311 to  
40 CFR 60, Subpart A, § 60.18**

<b>Type of Requirement</b>	<b>District Rule 4311 (unless otherwise noted)</b>	<b>Subpart A, § 60.18</b>	<b>Alternate Proposed Requirement</b>
Administrative	(6.2.1) The operator shall keep the following records at the facility for a period of at least five years: Copy of the compliance determination pursuant to section 6.1.1.	N/A	Addressed in the facility-wide template, SJV-UM-0-2
Test Methods	(6.3.1) VOC, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case Method 25a may be used, and analysis of halogenated exempt compounds shall be analyzed by EPA Method 18 or ARB Method 422 "Determination of Volatile organic Compounds in Emission from Stationary Sources". The VOC concentration in ppmv shall be converted to pounds per million Btu (lb/MMBtu) by using the following equation: $\text{VOC in lb/MMBtu} = \frac{[(\text{ppmv dry}) \times F \text{ dscf/MMBtu}]}{[1,135,000 \times (20.9 - \%O_2)]}$ Where: F = As determined by EPA Method 19 Alternate equivalent test methods may be used provided the test methods have been approved by the APCO and EPA.	N/A	This test method is not applicable to open flares and will not be required.
Test Methods	(6.3.2) NO <sub>x</sub> emissions in pounds per million BTU shall be determined by using EPA Method 19.	N/A	This test method is not applicable to open flares and will not be required.
Test Methods	(6.3.3) NO <sub>x</sub> and O <sub>2</sub> concentrations shall be determined by using EPA Method 3A, EPA Method 7E, or ARB 100.	N/A	This test method is not applicable to open flares and will not be required.

**6. District Rule 4451, Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants and 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries**

- a. Flare (S-37-7-2)
  - All of the requirements for Rule 4451 and 40 CFR Part 60, Subpart GGG are included in the facility-wide requirements, as discussed in the facility-wide compliance section.

**7. District Rule 4452, Pump and Compressor Seals at Petroleum Refineries and Chemical Plants and 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries**

a. Flare (S-37-7-2)

- All of the requirements for Rule 4452 and 40 CFR Part 60, Subpart GGG are included in the facility-wide requirements, as discussed in the facility-wide compliance section.

**8. District Rule 4454, Refinery Process Unit Turnaround**

District Rule 4454 has been submitted to the EPA to replace Kern County Rule 414.3 which is in the SIP. District Rule 4454 is as stringent as Kern County Rule 414.3, as shown on Table 4.

**Table 3 - Comparison of District Rule 4454 and Kern County Rule 414.3**

REQUIREMENT	District Rule 4454	Kern County Rule 414.3
A person shall not depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures: a. The organic vapors shall either be recovered, added to the refinery fuel gas system and combusted; or controlled and piped to an appropriate firebox or incinerated for combustion; or flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible. b. All process vessels shall be depressurized into the control facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere. c. All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting.	✓	✓
Any process vessel that has been depressurized to less than 1020 mm Hg (5 psig).	✓	✓

The purpose of this rule is to limit VOC emissions resulting from the purging, repair, cleaning, or otherwise opening or releasing pressure from a refinery vessel during a process unit turnaround.

Compliance with the above requirements is assured by the following conditions in the requirements for these permit units.

- a. Flare (S-37-7-2)
  - Condition 17 of the requirements for this permit unit assures compliance with this rule.

**9. 40 CFR 60 Subpart A**

NSPS Subpart A section 60.18 (c)(1) requires flares to be designed and to operate with no visible emissions, except for periods not to exceed 5 minutes during any 2 consecutive hours. Section 60.18 (f)(1) also requires that visible emissions determinations be made using EPA Method 22. Compliance with these requirements [are streamlined in Table 2](#) and assured by permit conditions [3](#) and [facility wide requirement 22](#).

Sections 60.18 (c)(3), 60.18 (c)(5), and 60.18 (f)(3-6) set a limit on the net heating value of the flared gas to be no less than 200 Btu/scf for nonassisted flares and 300 Btu/scf for air-assisted or steam-assisted flares. The method to be used to calculate net heating value is also specified. Compliance with these requirements [is](#) assured by permit conditions [9](#), [10](#), and [14](#).

Section 60.18 (c)(4)(i-iii) also requires the flare gas exit velocity to conform to the following limits:

<u>Flare Type</u>	<u>Flare Gas Min. Btu/scf</u>	<u>Exit Velocity (ft/sec)</u>	
		<u>Min</u>	<u>Max</u>
Air-assisted	300	----	< 55
Nonassisted	200	----	< 60
Steam-assisted	300	----	< 60
Nonassisted	>1,000	60	<400
Steam-assisted	>1,000	60	<400

Compliance with these operating limits will be ensured by permit conditions [10](#), [11](#), and [12](#).

Sections 60.18 (c)(2), 60.18 (e), and 60.18 (f)(2)  
These sections of Subpart A require that flares be operated with a flame present at all times when emissions may be vented to them. The presence of the pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the flame presence. Compliance with these requirements will be assured by permit conditions [2 through 4](#).

**10. 40 CFR Part 60, Subpart J, Standards of Performance for Petroleum Refineries**

The provisions of this subpart are applicable to petroleum refineries that utilize fuel gas combustion devices which are equipment, such as process heaters, boilers and flares used to combust fuel gas.

Section 60.104(a)(1) requires that any fuel gas combustion device shall not burn any fuel gas hydrogen sulfide (H<sub>2</sub>S) in excess of 0.10 gr/dscf (230 mg/dscm).

Section 60.105 requires the installation of a continuous monitoring systems to monitor SO<sub>2</sub> emissions into the atmosphere or the concentration of H<sub>2</sub>S in the fuel gas being burned.

Compliance with the above requirements is assured by the following conditions in the requirements for these permit units.

- a. Flare (S-37-7-4)
  - Conditions 14, 15, 18, and 19 of the requirements for this permit unit assure compliance with this rule.

## ORGANIC LIQUID LOADING EQUIPMENT

### I. EQUIPMENT LISTING

The following table is a list of the equipment included in this evaluation:

Permit Unit #	Equipment Description
S-37-8-9	230 HP GASOLINE LOADING AREA AND REFINERY VAPOR RECOVERY SYSTEM INCLUDING GASOLINE LOADING RACK AND DIESEL LOADING RACK.
S-37-43-1	15 HP LIGHT SOLVENT TRUCK LOADING OPERATION WITH VAPOR CONTROL SYSTEM INCLUDING: EMCO WHEATON LOADING HOSE AND VAPOR RETURN COUPLERS, 15 PUMP, METER AND CHECK VALVES AND VAPOR RETURN PIPING TO VAPOR CONTROL SYSTEM
S-37-46-1	30 HP LIQUID LOADING OPERATION INCLUDING ONE UNCONTROLLED LIQUID LOADOUT LINE, ONE ORGANIC LIQUID LOADOUT LINE EQUIPPED WITH VAPOR RECOVERY, TWO 15 HP PUMPS, DRY-BREAK CONNECTORS, METER(S), AND CHECK VALVES.
S-37-58-1	29 HP JP-4 TRUCK LOADING OPERATION INCLUDING TWO EMCO WHEATON API STYLE DRYBREAK BOTTOM LOADING COUPLERS AND HOSES, TWO OPW MODEL 633 VAPOR RECOVERY COUPLERS AND VAPOR RETURN HOSES, 29 HP UNLOADING PUMP, FILTER, AND METER AND CHECK VALVES
S-37-67-2	8,400 GALLON FIXED ROOF PETROLEUM STORAGE TANK
S-37-71-1	25 HP ETHANOL TRUCK RECEIVING AND LOADING OPERATION INCLUDING TRUNK UNLOADING CONNECTION, TRUCK LOADING HOSE WITH DRY BREAK COUPLER, VAPOR RECOVERY HOSE WITH DRY BREAK CONNECTOR AND PIPING TO PERMIT S-37-56
S-37-79-1	14,700 GALLON ABOVE GROUND GASOLINE STORAGE TANK EQUIPPED WITH ONE (1) DISPENSING NOZZLE AND CARB CERTIFIED VAPOR BALANCE SYSTEM CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON PERMIT #S-37-8.
S-37-93-1	TRUCK LOADING RACK, INCLUDING 4 FUEL OIL LOADING SPOTS AND 2 ATMOSPHERIC GAS OIL (AGO) LOADING SPOTS
S-37-94-1	RAILCAR LOADING RACK, INCLUDING 6 DIESEL FUEL LOADING SPOTS

**II. GENERAL PERMIT TEMPLATE USAGE**

None

**III. SCOPE OF EPA AND PUBLIC REVIEW**

All federally enforceable requirements for the permits listed in this subpart are subject to EPA and public review.

**IV. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES**

None

**V. APPLICABLE REQUIREMENTS NOT ADDRESSED BY GENERAL PERMIT TEMPLATES**

District New and Modified Stationary Source Review Rule

District Rule 1070, Inspections (amended December 17, 1992)

District Rule 1081, Source Sampling (Amended December 16, 1993) (Non SIP replacement for Kern County Rule 108.1)

District Rule 2010, Permits Required (Amended December 17, 1992)

District Rule 2520, Sections 9.4.2 and 9.5.2, Federally Mandated Operating Permits (Adopted June 15, 1995)

District Rule 4001, New Source Performance Standards (Amended April 14, 1999)

District Rule 4451, Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants (Amended December 17, 1992)

District Rule 4452, Pump and Compressor Seals at Petroleum Refineries (Amended December 17, 1992)

District Rule 4621, Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants (Amended June 18, 1998)

District Rule 4622, Gasoline Transfer Into Motor Vehicle Fuel Tanks (Amended June 18, 1998)

District Rule 4624, Organic Liquid Loading (Amended December 17, 1992)

## **VI. REQUIREMENTS NOT FEDERALLY ENFORCEABLE**

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permits. The terms and conditions that are part of the facility's Title V permit are designated as Federally Enforceable Through Title V Permit.

District Rule 4102 Nuisance

For this facility, condition 38 of the requirements for the facility wide requirements is based on the rule listed above and is not Federally Enforceable through Title V.

## **VII. COMPLIANCE**

### **A. Requirements Addressed by Model General Permit Templates**

#### **1. Facility Wide Requirements**

Condition numbers 1 through 3 and 5 through 43 added to the facility wide requirements S-37-0-1 assure compliance with federally applicable facility-wide requirements.

### **B. Requirements Not Addressed by Model General Permit Templates**

#### **1. New and Modified Stationary Source Review Rule**

##### **a. Gasoline Loading Area and Refinery Vapor Recovery System (S-37-8-8)**

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 16 of the requirements for permit unit (S-37-8-9).
- Condition 2 from the PTO was included as condition 17 of the requirements for permit unit (S-37-8-9).
- Condition 3 from the PTO was included as condition 18 of the requirements for permit unit (S-37-8-9).
- Condition 4 from the PTO was included as condition 1 of the requirements for permit unit (S-37-8-9).
- Condition 5 from the PTO was included as condition 9 of the requirements for permit unit (S-37-8-9).
- Condition 6 from the PTO was included as condition 20 of the requirements for permit unit (S-37-8-9).
- Condition 7 from the PTO was included as condition 21 of the requirements for permit unit (S-37-8-9).
- Condition 8 from the PTO was included as condition 22 of the requirements for permit unit (S-37-8-9).
- Condition 9 from the PTO was included as condition 17 of the requirements for permit unit (S-37-8-9).
- Condition 10 from the PTO was included as condition 24 of the requirements for permit unit (S-37-8-9).
- Condition 11 from the PTO was included as condition 25 of the requirements for permit unit (S-37-8-9).
- Condition 12 from the PTO was included as condition 26 of the requirements for permit unit (S-37-8-9).

b. Light Solvent Truck Loading Operation (S-37-43-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 16 of the requirements for permit unit (S-37-43-1).
- Condition 2 from the PTO was included as condition 17 of the requirements for permit unit (S-37-43-1).
- Condition 3 from the PTO was included as condition 18 of the requirements for permit unit (S-37-43-1).
- Condition 4 from the PTO was included as condition 19 of the requirements for permit unit (S-37-43-1).
- Condition 5 from the PTO was included as condition 20 of the requirements for permit unit (S-37-43-1).

- Condition 6 from the PTO was included as condition 21 of the requirements for permit unit (S-37-43-1).

c. Liquid Loading Operation (S-37-46-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 16 of the requirements for permit unit (S-37-46-2).
- Condition 2 from the PTO was included as condition 17 of the requirements for permit unit (S-37-46-2).
- Condition 3 from the PTO was included as condition 18 of the requirements for permit unit (S-37-46-2).
- Condition 4 from the PTO was included as condition 19 of the requirements for permit unit (S-37-46-2).
- Condition 5 from the PTO was included as condition 20 of the requirements for permit unit (S-37-46-2).
- Condition 6 from the PTO was included as condition 21 of the requirements for permit unit (S-37-46-2).
- Condition 7 from the PTO was included as condition 22 of the requirements for permit unit (S-37-46-2).
- Condition 8 from the PTO was included as condition 23 of the requirements for permit unit (S-37-46-2).
- Condition 9 from the PTO was included as condition 24 of the requirements for permit unit (S-37-46-2).
- Condition 10 from the PTO was included as condition 1 of the requirements for permit unit (S-37-46-2).
- Condition 11 from the PTO was included as condition 25 of the requirements for permit unit (S-37-46-2).
- Condition 12 from the PTO was included as condition 26 of the requirements for permit unit (S-37-46-2).

e. JP-4 Truck Loading Operation (S-37-58-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 13 of the requirements for permit unit (S-37-58-1).
- Condition 2 from the PTO was included as condition 14 of the requirements for permit unit (S-37-58-1).
- Condition 3 from the PTO was included as condition 15 of the requirements for permit unit (S-37-58-1).
- Condition 4 from the PTO was included as condition 16 of the requirements for permit unit (S-37-58-1).
- Condition 5 from the PTO was included as condition 17 of the requirements for permit unit (S-37-58-1).
- Condition 6 from the PTO was included as condition 18 of the requirements for permit unit (S-37-58-1).

e. 8,400 Gallon Fixed Roof Petroleum Storage Tank W/ Loading Rack (S-37-67-2)

- Condition 1 from the PTO was included as condition 1 of the requirements for permit unit.
- Condition 2 from the PTO was included as condition 2 of the requirements for permit unit.
- Condition 3 from the PTO was included as condition 3 of the requirements for permit unit.
- Condition 4 from the PTO was included as condition 4 of the requirements for permit unit.
- Condition 5 from the PTO was included as condition 5 of the requirements for permit unit.

f. Ethanol Truck Receiving Operation (S-37-71-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct. In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 7 of the requirements for this permit unit (S-37-71-1).
- Condition 2 from the PTO was included as condition 8 of the requirements for this permit unit (S-37-71-1).
- Condition 3 from the PTO was included as condition 9 of the requirements for this permit unit (S-37-71-1).

- Condition 4 from the PTO was included as condition 10 of the requirements for this permit unit (S-37-71-1).
- Condition 5 from the PTO was included as condition 11 of the requirements for this permit unit (S-37-71-1).
- Condition 6 from the PTO was included as condition 12 of the requirements for this permit unit (S-37-71-1).
- Condition 7 from the PTO was included as condition 13 of the requirements for this permit unit (S-37-71-1).
- Condition 8 from the PTO was included as condition 14 of the requirements for this permit unit (S-37-71-1).
- Condition 9 from the PTO was included as condition 15 of the requirements for this permit unit (S-37-71-1).
- Condition 10 from the PTO was included as condition 16 of the requirements for this permit unit (S-37-71-1).

g. Gasoline Dispensing Operation (S-37-79-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (1993). In accordance with the White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for this permit unit (S-37-79-1).
- Condition 2 from the PTO was included as condition 2 of the requirements for this permit unit (S-37-79-1).
- Condition 3 from the PTO was included as condition 3 of the requirements for this permit unit (S-37-79-1).
- Condition 4 from the PTO was included as condition 4 of the requirements for this permit unit (S-37-79-1).
- Condition 5 from the PTO was included as condition 5 of the requirements for this permit unit (S-37-79-1).
- Condition 6 from the PTO was included as condition 6 of the requirements for this permit unit (S-37-79-1).
- Condition 7 from the PTO was included as condition 7 of the requirements for this permit unit (S-37-79-1).
- Condition 8 from the PTO was included as condition 8 of the requirements for this permit unit (S-37-79-1).

- h. Fuel Oil Loading Racks for Trucks (S-37-93-0) and Railcars (S-37-94-0)

These units were not subject to the District NSR Rule at the time the applicant applied for a Permit to Operate.

- Condition 1 from the PTO was included as condition 1 of the requirements for this permit unit (S-37-93-1 and S-37-94-1).

## 2. District Rule 1081, Source Sampling

District Rule 1081 has been submitted to the EPA to replace Kern County Rule 108.1, which is in the SIP. District Rule 1081 is as stringent as Kern County Rule 108.1, as shown on Table 2.

Table 2 - Comparison of District Rule 1081 and Kern County Rule 108.1

REQUIREMENTS	1081 District	108.1 Kern
Upon request of the APCO, the source shall provide info. and records to enable the APCO to determine when a representative sample can be taken.	✓	✓
The facility shall collect, have collected or allow the APCO to collect, a source sample	✓	✓
The source shall have District personnel present at a source test	✓	
The applicable test method, if not specified in the rule, shall be conducted in accordance with 40 CFR § 60, Appendix A	✓	
Test procedures: 1) arithmetic mean of three runs 2) a scheduled source test may not be discontinued solely due to the failure to meet the applicable standard(s), and 3) arithmetic mean of two runs is acceptable if circumstances beyond owner or operator control occurs.	✓	

Sections 3.0, 4.0, 5.0, 6.0, and 7.0 of District Rule 1081 set forth requirements for sampling facilities, collection of samples, test methods, test procedures, and administrative requirements, respectively.

- a. Gasoline Dispensing Operation (S-37-79-0)

- Condition 7 on the PTO was included as Condition 7 on the permit unit requirements (S-37-79-1). In addition, Condition 4 of the facility-wide requirements (S-37-0-1) addresses the requirements of this rule.

## 3. District Rule 2520, Sections 9.1, 9.3.2 and 9.4.2, Federally Mandated Operating Permits

Section 9.1 requires each permit to include emission limitations and standards, including those operational requirements and limitations that

assure compliance with all applicable requirements at the time of permit issuance. Such conditions are placed on the permits for all applicable requirements identified in Section VII of this evaluation.

Section 9.3.2 of the rule requires that periodic monitoring be performed if none is associated with a given emission limit to assure compliance. For permit units not discussed in detail in this section, existing permit conditions are sufficient to assure compliance with applicable requirements; therefore no conditions were added pursuant to Section 9.3.2.

Section 9.4.2 of the rule requires that records of all required monitoring data and support information be retained for a period of at least five years from the date of the monitoring sample, measurement, or report. Condition 9 of the facility-wide requirements (S-37-0-1) states this.

The units listed below have an additional conditions stating the requirements of Sections 9.1, 9.3.2, and 9.4.2.

- a. Gasoline Loading Area and Refinery Vapor Recovery System (S-37-8-8), Light Solvent Truck Loading Operation (S-37-43-0), Liquid Loading Operation (S-37-46-2), JP-4 Loading Operation (S-37-58-1)

To assure compliance with Section 9.1, Condition 15 prohibits loading of a delivery vessel if its pressure relief valve opens and requires corrective action should this condition occur.

To assure compliance with Section 9.3.2, Conditions #10, #11, and #12 (#6, 7, 8 for S-37-58-1) were added to each permit to operate. Section 5.4 of District Rule 4624 requires there shall be no excess organic liquid drainage at disconnect, but does not specify monitoring frequency or method. The added conditions contain monitoring frequencies and test methods.

To assure compliance with Section 9.4.2, Condition #13 (#9 for S-37-58-1) requires recordkeeping to document leak and excess drainage testing, monitoring and repair.

c. Truck Loading Racks (S-37-93-1 and S-37-94-1)

As required by 9.4.2, Condition 2 of the permit unit requirements requires recordkeeping to assure that the organic liquid loaded has TVP under 1.5 psi, as required in Condition 1 to maintain exemption from District Rule 4624.

**4. District Rule 4001, New Source Performance Standards**

This rule incorporates the New Source Performance Standards from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR). All new sources of air pollution and modification of existing sources of air pollution shall comply with the standards, criteria, and requirements set forth therein. Compliance with the applicable performance standards will be discussed under the sub-heading for each 40 CFR Part 60 subpart.

**5. 40 CFR 60 Subpart XX, Standards of Performance for Bulk Gasoline Terminals**

The requirements of this subpart apply to gasoline bulk terminals, which are facilities that receive gasoline by pipeline, barge, or ship > 75,700 l/day. The gasoline received by the loading racks is by truck or from within the facility. Therefore, the refinery is not subject to this subpart.

**6. District Rule 4451, Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants (Amended December 17, 1992)**

District Rule 4451 limits leaks from valves, pressure relief valves, flanges, threaded connections and process drains at petroleum refineries. Conditions 44 through 60 and 68 of the facility-wide permit (S-37-0-1) state the requirements of this rule. In addition, the permits listed below contain conditions stating the requirements of this rule.

a. Gasoline Loading Area and Refinery Vapor Recovery System (S-37-8-9)

- Condition 6 from the PTO was included as condition 20 and 25 of the requirements for this permit unit.

b. Liquid Loading Operation (S-37-46-2)

- Condition 8 from the PTO was included as condition 23 of the requirements for this permit unit.

- c. Ethanol Truck Receiving Operation (S-37-71-0)
  - Condition 6 from the PTO was included as condition 12 of the requirements for this permit unit.

**7. District Rule 4452, Pump and Compressor Seals at Petroleum Refineries (Amended December 17, 1992)**

District Rule 4452 limits leaks from pumps and compressors and associated seals that may result in fugitive emissions of VOC at petroleum refineries. In addition, District Rule 4452 addresses test methods and recordkeeping requirements. Conditions 60 through 68 of the facility-wide permit (S-37-0-1) state the requirements of this rule. In addition, the permits listed below contain conditions stating the requirements of this rule.

- a. Gasoline Loading Area and Refinery Vapor Recovery System (S-37-8-8)
  - Condition 7 from the PTO was included as condition 25 of the requirements for this permit unit (S-37-8-9).
- b. Liquid Loading Operation (S-37-46-1)
  - Condition 8 from the PTO was included as condition 23 of the requirements for this permit unit.

**8. District Rules 4621 Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants**

The purpose of this rule is to limit VOC emissions from stationary gasoline storage containers, gasoline delivery vessels and gasoline bulk plants. District Rule 4621, sections 5.1 and 5.2, is applicable to gasoline delivery vessels with capacity greater than 120 gallons and contains general facility requirements regarding transfer to and storage of gasoline in stationary storage tanks.

Except for permit units S-37-58-1, S-37-67-2 and S-37-79-1, the requirements of this rule are addressed in the streamlining of applicable requirements under District Rule 4624.

- a. JP-4 Truck Loading Operation (S-37-58-1)

This organic loading operation is limited to loading JP-4, a jet fuel with properties similar to kerosene. JP-4 has a Reid vapor

pressure less than 4 psia. According to Section 3.5 JP-4 is not defined as gasoline. Therefore this rule does not apply to this unit.

- b. 8,400 Gallon Storage Tank Serving Truck Unloading (S-37-67-2)
  - Condition 6 through 10 of the permit unit requirements assure compliance with this rule.
- c. Gasoline Dispensing Operation (S-37-79-1)
  - Conditions 1 through 4 of the requirements for this permit unit (S-37-79-1) assure compliance with this rule.

**9. District Rule 4622, Gasoline Transfer Into Motor Vehicle Fuel Tanks (Amended June 18, 1998)**

The purpose of this rule is to limit VOC emissions from the transfer of gasoline into motor vehicle fuel tanks.

- a. Gasoline Dispensing Operation (S-37-79-1)
  - Conditions 1, 2, 5, 6 and 8 of the requirements for this permit unit (S-37-79-1) assure compliance with this rule.

**10. District Rule 4624 (formerly 463.3), Organic Liquid Loading**

The purpose of this rule is to limit VOC emissions from organic liquid loading. The requirements of this rule apply to organic liquid loading facilities that load more than 4,000 gallons per day of organic liquid with a vapor pressure greater than 1.5 psia.

Pursuant to District Rule 4624, a Class 1 Organic Liquid Loading Facility is any facility loading 20,000 gallons or more on any one day of organic liquids (including gasoline) with a TVP of 1.5 psia or greater into tank trucks, trailers, or railroad tank cars. District Rule 4624, formerly District Rule 463.3, has been submitted to the EPA to replace each of the county rules in the SIP: Rules 412 (Fresno, Kings, Stanislaus, Merced, and San Joaquin), 413 (Kern and Tulare), and 419 (Madera).

Except for permit units S-37-58-1, S-37-71-1, S-37-93-1 and S-37-94-1, the requirements of Rule 4624 and 4621 are addressed in the streamlining of applicable requirements in this section.

- a. JP-4 Truck Loading Operation (S-37-58-1)

- Condition 1 through 11 of the requirements for this permit unit assure compliance with Rule 4624. The requirements of Rule 4621 are not applicable to this permit unit.
- b. Ethanol Truck Receiving Operation (S-37-71-1)  
  
The receiving operation is limited to loading 3,000, which is below the applicability threshold for this rule. Therefore Rule 4624 is not applicable to this permit unit.
- c. Truck Loading Racks (S-37-93-1 and S-37-94-1)  
  
• Condition 1 of the requirements for these permit units limits the true vapor pressure (TVP) of the liquid loaded to less than 1.5 psi, which makes these units exempt from Rule 4624.
- d. Gasoline Loading Area and Refinery Vapor Recovery System (S-37-8-9), Light Solvent Truck Loading Operation (S-37-43-1), Liquid Loading Operation (S-37-46-2),

The following analysis shows that the VOC emission requirements of District Rule 4624 are more stringent than the emission requirements of the county rules. Streamlining procedures, in accordance with White Paper Number 2 and as documented in the following steps, are utilized to substitute the proposed set of requirements for the otherwise applicable requirements of county rules, Rule 4621 and Rule 4624.

**Step 1. Side-by-side Comparison of Applicable Requirements:**

CITATION:	District Rule 4624	County Rules 412, (Merced, Stanislaus), 413 (Kern, Tulare), and 419 (Madera)	San Joaquin County Rule 412	Fresno County Rule 412	Kings County Rules 412	District Rule 4621, 5.1 and 5.2	Proposed Requirements
WORK PRACTICE STANDARDS SUPPORTING EMISSION LIMIT (E.L.)	<ul style="list-style-type: none"> <li>•Delivery tanks which previously contained organic liquids with a TVP greater than 1.5 psia at loading conditions shall be filled only at loading facilities satisfying Sections 5.1 and 5.2. [4624, 5.3]</li> <li>•Facility shall be equipped with bottom loading and a vapor-collection-and-control system. [4624, 5.1.1]</li> <li>•Operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and 6 inches water column vacuum. [4624, 5.2]</li> </ul>	<ul style="list-style-type: none"> <li>• Loading facility equipped with vapor collection and disposal system. [412, 413, 419]</li> </ul>	<ul style="list-style-type: none"> <li>•Loading facility equipped with vapor collection and disposal system. [412(a)(1)]</li> </ul>	<ul style="list-style-type: none"> <li>•Loading facility equipped with vapor collection and disposal system. [412(C)(1)]</li> </ul>	<ul style="list-style-type: none"> <li>•Any gasoline delivery vessel into which gasoline vapors have been transferred shall be filled only at a facility with system preventing at least 95% of vapors displaced from entering atmosphere. [412(4)(a)]</li> </ul>	<ul style="list-style-type: none"> <li>• Any gasoline delivery vessel into which gasoline vapors have been transferred shall be filled only at a facility with system preventing at least 95% of vapors displaced from entering atmosphere. [4621, 5.2.2]</li> </ul>	<ul style="list-style-type: none"> <li>•Delivery tanks which previously contained organic liquids, including gasoline, with a TVP greater than 1.5 psia at loading conditions shall be filled only at loading facilities satisfying Sections 5.1 and 5.2. [4624, 5.3, 4621, 5.2.2 and 412(4)(a)]</li> <li>•Facility shall be equipped with bottom loading and a vapor collection and control system. [4624, 5.1.1]</li> <li>•Operate such that the pressure in the delivery tank being loaded does not exceed 18 inches water column pressure and 6 inches water column vacuum. [4624, 5.2]</li> </ul>

EMISSION LIMIT	<ul style="list-style-type: none"> <li>•VOC emissions shall not exceed 0.08 pound per 1000 gallons of organic liquid loaded. [4624, 5.1.1]</li> </ul>	<ul style="list-style-type: none"> <li>•Disposal system of displaced vapors during loading shall consist of one of the following: 1) system with 90% efficiency or 2) directs vapors to fuel gas system, or 3) with efficiency as great as 1 or 2. [412, 413, 419]</li> </ul>	<ul style="list-style-type: none"> <li>•Disposal system will consist of one of the following: 1) system which limits emissions to 0.6 lb VOC per 1000 gallons loaded, or 2) directs vapors to fuel gas system, or 3) with efficiency as great as 1 or 2. [412(a)(3)]</li> </ul>	<ul style="list-style-type: none"> <li>•Disposal system of displaced vapors during loading shall consist of one of the following: 1) system with 90% efficiency or 2) directs vapors to fuel gas system, or 3) with efficiency as great as 1 or 2. [412(C)(1)]</li> </ul>	<ul style="list-style-type: none"> <li>•Any gasoline delivery vessel into which gasoline vapors have been transferred shall be filled only at a facility with system preventing at least 95% of vapors displaced from entering atmosphere. [412(4)(a)]</li> </ul>	<ul style="list-style-type: none"> <li>• Any gasoline delivery vessel into which gasoline vapors have been transferred shall be filled only at a facility with system preventing at least 95% of vapors displaced from entering atmosphere. [4621, 5.2.2]</li> </ul>	<ul style="list-style-type: none"> <li>•VOC emissions shall not exceed 0.08 pound per 1000 gallons of organic liquid loaded. [4624, 5.1.1]</li> </ul>
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WORK PRACTICE STANDARD NOT SUPPORTING E.L.	<ul style="list-style-type: none"> <li>• Loading and vapor collection equipment maintained such that there are no liquid leaks in excess of 3 drops/min or vapor leaks in excess of 10,000 ppm. [4624, 5.3]</li> <li>• Loading device maintained to prevent liquid drainage in excess of 10 ml per average of 3 consecutive disconnects. [4624, 5.4]</li> <li>• Construction, reconstruction, or expansion of any top loading facility shall not be allowed. [4624, 5.5]</li> </ul>	<ul style="list-style-type: none"> <li>• Measures shall be taken to prevent liquid drainage from loading device. [412, 413, 419]</li> </ul>	<ul style="list-style-type: none"> <li>• No delivery vessel operated or loaded unless vessel is vapor tight, per ARB certification and test procedures. [412(b)]</li> <li>• Loading device maintained to prevent liquid drainage in excess of 10 ml per average of 3 consecutive disconnects. [412(a)(2)]</li> </ul>	<ul style="list-style-type: none"> <li>• No liquid drainage in excess of 10 ml per disconnect per average of 3 consecutive disconnects. [412(C)(4)]</li> <li>• No liquid leaks in excess of 22,000 ppm. [412(C)(4)]</li> <li>• New facilities shall be constructed with bottom loading systems. [412(C)(2)]</li> </ul>	• None	<ul style="list-style-type: none"> <li>• No gasoline delivery vessel shall be operated or loaded unless valid State of California decals, as required by section 41962 of the Health and Safety Code are displayed on the cargo tank. [4621, 5.2.1]</li> <li>• No gasoline delivery vessel operated or loaded unless vessel is vapor tight. [4621, 5.2.2]</li> <li>• The transfer of gasoline from any delivery vessel to any stationary storage container with 250 gallon capacity or more shall not be allowed unless container is equipped with a permanent submerged fill pipe and an ARB certified Phase I vapor recovery system. [4621, 5.1.1]</li> <li>• No gasoline shall be placed in any above-ground tank of 250 gallon capacity or more unless it is equipped with pressure-vacuum valve. [4621, 5.1.2]</li> </ul>	<ul style="list-style-type: none"> <li>• Loading and vapor collection equipment shall be designed and operated such that there are no leaks. (leaks as defined in rule). [4624, 5.4]</li> <li>• Loading device shall have no excess organic liquid drainage at disconnections (excess drainage as defined in rule). [4624, 5.4]</li> <li>• No gasoline delivery vessel shall be operated or loaded unless valid State of California decals, attesting to the vapor integrity of the tank, are displayed on the cargo tank. [4621, section 5.2.1]</li> <li>• No gasoline delivery vessel operated or loaded unless vessel is vapor tight. [4621, 5.2.2]</li> <li>• Construction, reconstruction, or expansion of any top loading facility shall not be allowed. [4624, 5.5]</li> <li>• The transfer of gasoline from any delivery vessel to any stationary storage container with 250 gallon capacity or more shall not be allowed unless container is equipped with a permanent submerged fill pipe and an ARB certified Phase I vapor recovery system. [4621, 5.1.1]</li> <li>• No gasoline shall be placed in any above-ground tank of 250 gallon capacity or more unless it is equipped with pressure-vacuum valve. [4621, 5.1.2]</li> </ul>
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MONITORING	•None	•None	•None	•None	•None	•None	<ul style="list-style-type: none"> <li>• Corrective steps shall be taken at any time the operator observes excess drainage at disconnect. In addition, the operator shall perform and record the results of monthly drainage inspections at disconnect for each loading arm. If no excess drainage conditions are found during five consecutive monthly inspections, the drainage inspection frequency may be changed from monthly to quarterly. However, if one or more excess drainage condition is found during a quarterly inspection, the inspection frequency shall return to monthly. [District Rule 2520, 9.3.2] Y</li> <li>• Drainage inspections shall be completed before 10:00 AM the day of inspection. Compliance shall be demonstrated by collecting all drainage at disconnect in a spouted container. The drainage shall be transferred to a graduated cylinder and the volume determined within one (1) minute of collection. [District Rule 2520, 9.3.2] Y</li> </ul>
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RECORDKEEPING	<ul style="list-style-type: none"> <li>• Maintain all records for a period of not less than two years. [4624, 6.1]</li> </ul>	•None	•None	•None	•None	•None	<ul style="list-style-type: none"> <li>• The permittee shall maintain an inspection log containing at least the following: A) dates of leak and drainage inspections, B) leak determination method, C) findings, D) corrective action (date each leak or excess drainage condition repaired), and E) inspector name and signature. [District Rule 2520, 9.4.2] Y</li> <li>• Maintain all records for a period of not less than five years. [2520, 9.5.2]</li> </ul>
REPORTING	•None	•None	•None	•None	•None	•None	•None
TEST METHODS	<ul style="list-style-type: none"> <li>• Leak detection with portable hydrocarbon detection instrument calibrated with methane (i.e. similar to EPA Method 21) [4624, 3.6]</li> <li>• Halogenated exempt compounds by ARB Method 432. [4624, 6.2.1]</li> <li>• VOC emissions by using 40CFR§60.503 and EPA Reference Methods 2A, 2B, 25A and 25B and ARB Method 432, or ARB Method 2-4. [4624, 6.2.2]</li> </ul>	•None	•None	<ul style="list-style-type: none"> <li>• Vapor and Liquid leak detection using CARB test procedure with gas detector [412(C)(4)]</li> </ul>	•None	<ul style="list-style-type: none"> <li>• Tank Truck vapor tightness verified by EPA Method 27. [4621, 6.2.3]</li> <li>• Vapor recovery compliance using ARB Method 202 [4621, 6.2.1]</li> </ul>	<ul style="list-style-type: none"> <li>• Halogenated exempt compounds by ARB Method 432. [4624, 6.2.1]</li> <li>• VOC emissions by using 40CFR§60.503 and EPA Reference Methods 2A, 2B, 25A and 25B and ARB Method 432, or ARB Method 2-4. [4624, 6.2.2]</li> <li>• Tank Truck vapor tightness verified by EPA Method 27. [4621, 6.2.3]</li> </ul>

Kern Oil & Refining  
Facility #: S-37  
Project #: 961097

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December 17, 2002

**Step 2. Select most stringent emission limit and/or performance standard:**

VOC Emission Limits

- 1) Mass VOC/volume Loaded Limit: The proposed TOC emission limit of 0.08 pound VOC/1000 gallons of organic liquid loaded is at least as stringent and expected to be the same limit allowed by District Rule 4624 for all source operations using this template. It is more stringent than the mass limits allowed by District Rule 4621 and the county rules<sup>4</sup>, as indicated in the side-by-side comparison in Step 1.
- 2) Emission Limit Expressed as Control Efficiency: County rules 412 (Merced and Stanislaus), 413 (Kern and Tulare), and 419 (Madera) require a control device capable of 90%<sup>5</sup> efficiency. Fresno county rule 412 requires a collection and control device with at least 90% efficiency for vapors displaced during loading. The 90% collection and control requirement is more stringent than the other county rules referenced here since it requires at least 90% efficiency for collection and control. District Rule 4621 and Kings county rule 412 require any delivery vessel which previously contained gasoline vapors to be filled only at a loading facility equipped with a system that has 95% collection and control. This requirement is not necessarily more stringent than the 90% requirement, since it applies only to systems which are used to fill tanks which previously held gasoline. However, the proposed emission limit requirement of 0.08 lb TOC/1000 gallons loaded is more stringent than both the 90% and 95% control efficiency requirements, as demonstrated below:

90% Efficiency for Vapors Displaced:

$$L_L = 12.46 \left( \frac{SPM}{T} \right) \left( 1 - \frac{eff}{100} \right)$$

where:

$L_L$  = Loading losses from tank truck, pounds per 1000 gallons loaded (AP-42, 5.2, equation (1))

$S$  = 0.5, worst case saturation factor from AP-42 table 5.2-1

$P$  = 2.3, true vapor pressure of gasoline, worst case from AP-42, Table 7.1-2 and using Reid vapor pressure of 7 psia (from AP-42, 5.2), as worst case for gasoline at 40°F

$M$  = 68 = molecular weight of gasoline vapors, from AP-42 table 7.1-2

$T$  = 40°F = 500°R, worst case temperature of fluid during loading conditions

$eff$  = 90%, overall reduction efficiency

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4 San Joaquin and Kings counties allow several options for control of displaced VOC during loading. The District has chosen only to examine the 0.6 lb mass limit option allowed by these rules for comparison.

5 Merced, Fresno, Stanislaus, Kern, Tulare, and Madera counties allow several options for control of displaced VOC during loading. The District has chosen only to examine the control efficiency limit option allowed by these rules for comparison.

Minimizing the numerator in SPM/T and maximizing the denominator will result in the worst case values (i.e. lowest emissions) for variables in the above equation. This will occur with the lowest saturation factor for loading clean cargo tank and lowest temperature loading temperature expected which results in the lowest true vapor pressure expected<sup>6</sup>. Loading losses for gasoline collection and control systems with 90% efficiency are calculated to be 1.9 lb VOC/1000 gallons loaded. AP-42 states this equation is approximate with a probable error of  $\pm 30\%$ . Assuming this calculation is 30% high, at best, emissions are not expected to be less than 1.36 lb VOC/1000 gallons with 90% control. This value is 17 times greater than that allowed by the proposed emission limit of 0.08 lb TOC/1000 gallons loaded. Therefore, the proposed limit is more stringent and assures compliance.

95% Efficiency for Vapors In Tanks Which Previously Held Gasoline: The same equation above is used to determine loading loss, however the saturation factor, S is equal to 1.0 for dedicated vapor balance service (i.e. gasoline vapors transferred into tank during unloading). With 95% control and assuming 30% error in the equation, the minimum loading loss is not expected to be less than 0.14 lb VOC/1000 gallons. This value is approximately 2 times greater than that allowed by the proposed emission limit of 0.08 lb TOC/1000 gallons loaded. The proposed limit is more stringent and assures compliance when tanks containing gasoline vapors are loaded by any unit using this template. However this general source requirement is necessary to prevent loading of any such tank using other racks which do not meet these requirements. This standard for loading into gasoline delivery vessels has been combined with the similar work practice standard for organic liquid delivery vessels from District Rule 4624, section 5.3. The proposed standard is more stringent for loading gasoline at Class 1 facilities, as proven above, and as stringent for Class 2 facilities.

#### Work Practice Standards Not Supporting An Emissions Limit

The proposed work practice standards not in support of an emission limit consist of the following:

1. Loading and vapor collection shall be designed and operated such that there are no leaks and no excess organic liquid drainage at disconnections (leaks and excess drainage as defined in Rule 4624).
2. No gasoline delivery vessel shall be operated or loaded unless valid State of California decals, attesting to the vapor integrity of the tank, are displayed on the cargo tank.

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<sup>6</sup> Higher temperatures require a higher TVP to be used in the equation. The combination of lowest loading temperature and associated TVP at this temperature does result in the lowest factor for use in this equation. See AP-42, Table 7.1-2.

3. No gasoline delivery vessel shall be used or operated unless it is vapor tight.
4. Construction, reconstruction, or expansion of any top loading facility shall not be allowed.
5. The transfer of gasoline from any delivery vessel to any stationary storage container with 250 gallon capacity or more shall not be allowed unless container is equipped with a permanent submerged fill pipe and an ARB certified Phase I vapor recovery system.
6. No gasoline shall be placed in any above-ground tank of 250 gallon capacity or more unless it is equipped with pressure-vacuum valve.

These proposed work practice standards are equivalent to, or more stringent than, Rule 4621, Rule 4624 and the county rules as demonstrated below.

District Rule 4621: This rule has 4 work practice standards not in support of an emissions limit. These work practice standards are included in the proposed standards. Therefore the proposed standards are as stringent as District Rule 4621.

District Rule 4624: This rule has 3 work practice standards not in support of an emissions limit. Two of the work practice standards address leaks and liquid drainage. The proposed conditions are identical to the leak and drainage requirements of this rule. The third standard prohibits the source from constructing, reconstructing, or expanding any top loading facility. This general source requirement is included as a permit condition to assure compliance with the rule. The proposed work practice standards are as stringent as District Rule 4624.

County Rules 412 (Fresno, Kings, Stanislaus, Merced, and San Joaquin), 413 (Kern and Tulare), and 419 (Madera): These rules, combined, contain 5 work practice standards not in support of an emissions limit. Four of the standards address leaks and liquid drainage. The proposed standards requiring no leaks in the loading and vapor collection system (vapor detected in excess of 10,000 ppm and liquid in excess of 3 drops/minute) and no leaks in excess of 10 mls at disconnection are as stringent or more stringent than those required by the county rules, as shown in the Step 1 comparison table. The fourth county standard prohibits loading into delivery vessels unless they have valid State of California decals which attest to the vapor integrity of the tank, pursuant to California Air Resources Board (CARB) procedures. The proposed standard prohibits operation or loading of a gasoline delivery vessel unless valid State of California

decals are displayed. Section 41962 of the California Health and Safety Code gives authority to CARB to establish performance standards and test procedures to be performed annually for gasoline cargo tanks. The California Code of Regulations, Title 17, subchapter 8, Article 1, section 94004, Certification of Vapor Recovery Systems - Gasoline Cargo Tanks, refers to the CARB's "Certification and Test Procedures for Vapor Recovery Systems of Gasoline Cargo Tanks". This CARB publication contains the applicable test procedures and performance standards, which are described in this template (specifically CP-204, TP-204.1, TP-204.2). CP-204 contains the performance standards and other certification requirements. TP-204.1 is a 5-minute pressure-vacuum decay test, which is similar to EPA Method 27. Annual internal vapor valve testing is also required. Tanks which pass this annual test are issued a state decal which is nonremovable and must be displayed on the cargo tank. The state also randomly monitors cargo tanks at gasoline loading facilities using either a hydrocarbon detection method or a 1-minute pressure decay test (TP-204.2), to assist in assuring tank integrity is maintained throughout the year. Cargo tanks unable to pass these spot tests are removed from service until repaired and able to pass required vapor integrity tests. The state decals are nontransferable and nonremovable and verify the delivery tank has been certified using ARB procedures. This proposed work practice standard is as stringent as the requirements of the combined county rules.

**Step 3. Conditions ensuring compliance with applicable requirements.**

Conditions 1 through 15, 19, and 22 through 25 of the permit unit requirements (S-37-8-9, S-37-43-1, S-37-46-2, and S-37-71-1) assure compliance with these rules.

## Organic Liquid Storage Tanks and Miscellaneous Storage Tanks

### I. EQUIPMENT DETAIL

The following is a list of equipment included in this category:

Permit Unit	Equipment Description
S-37-12	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5009 WITH VAPOR RECOVERY
S-37-13	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5010 WITH VAPOR RECOVERY
S-37-14	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5011 WITH VAPOR RECOVERY
S-37-15	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5020 WITH VAPOR RECOVERY.
S-37-16	504,000 GALLON FLOATING ROOF TANK #12000
S-37-17	504,000 GALLON FLOATING ROOF STORAGE TANK #12001
S-37-18	420,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #10007 WITH VAPOR RECOVERY
S-37-19	420,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #10008 WITH VAPOR RECOVERY
S-37-20	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10001 WITH VAPOR RECOVERY.
S-37-21	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5006.
S-37-22	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5007.
S-37-23	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5008 SERVED BY REFINERY VAPOR CONTROL SYSTEM LISTED ON S-37-8
S-37-24	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3014.
S-37-25	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3026.
S-37-26	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3027.
S-37-27	1,554,000 GALLON INTERNAL FLOATING CRUDE OIL STORAGE TANK #37,000 WITH ALTECH INDUSTRIES INTERNAL FLOATING ROOF
S-37-28	3,360,000 GALLON INTERNAL FLOATING ROOF CRUDE OIL STORAGE TANK #80,000 WITH ALTECH INDUSTRIES INTERNAL FLOATING ROOF
S-37-31	42,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #1000 WITH VAPOR RECOVERY.
S-37-34	3,360,000 GALLON FLOATING ROOF PETROLEUM STORAGE TANK #80,001 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL
S-37-42	150,000 GALLON NAPHTHA STORAGE TANK #3300 WITH VAPOR RECOVERY
S-37-44	126,000 GALLON NAPHTHA STORAGE TANK #3019
S-37-48	225,600 GALLON NAPHTHA STORAGE TANK #5014 WITH VAPOR RECOVERY
S-37-49	225,600 GALLON PETROLEUM STORAGE TANK #5015 WITH VAPOR RECOVERY

Permit Unit	Equipment Description
S-37-50	42,000 GALLON GASOLINE STORAGE TANK #1100 WITH VAPOR RECOVERY
S-37-51	840,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #20001 WITH VAPOR RECOVERY.
S-37-52	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10000 WITH VAPOR RECOVERY.
S-37-53	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10002 WITH VAPOR RECOVERY.
S-37-56	21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #505 WITH VAPOR RECOVERY
S-37-57	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5017 SERVED BY VAPOR RECOVERY AND 29 HP CIRCULATION PUMP WITH CLAY FILTER.
S-37-59	840,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #20000 WITH VAPOR RECOVERY.
S-37-61	800 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #800
S-37-65	11,256 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK (DEHY NORTH) WITH VAPOR RECOVERY.
S-37-66	11,256 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK (DEHY SOUTH) WITH VAPOR RECOVERY.
S-37-90	105,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #2501 WITH VAPOR RECOVERY.
S-37-91	105,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #2502 WITH VAPOR RECOVERY.
S-37-95	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10003 VENTING TO 2000 LB CARBON CANNISTER SHARED WITH S-37-96
S-37-96	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10004 VENTING TO 2000 LB CARBON CANNISTER SHARED WITH S-37-95
S-37-97	3,000 BBL (126,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #3012 SERVED BY VAPOR CONTROL SYSTEM S-37-8
S-37-99	1100 BBL FIXED ROOF RECOVERED ORGANIC LIQUID STORAGE TANK WITH PV VENT. (TANK #1008)
S-37-102	10,000 BBL (420,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #10005 SERVED BY VAPOR CONTROL SYSTEM LISTED ON PTO S-37-8.
S-37-111	55,000 BBL CRUDE OIL TANK VENTED TO GRANULAR ACTIVATED CARBON (GAC) VAPOR CONTROL SYSTEM

## II. GENERAL PERMIT TEMPLATE USAGE

The applicant has chosen not to use any model general permit Templates for the equipment listed above.

### **III. SCOPE OF EPA AND PUBLIC REVIEW**

Kern Oil & Refining Company has not requested to utilize model general permit templates for this type of equipment. All terms and conditions from the proposed permits are subject to EPA and public review.

### **IV. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES**

The applicant has not proposed to utilize any model general permit templates. All applicable requirements are explicitly addressed in the permit outside of the general permit templates.

### **V. APPLICABLE RULES NOT ADDRESSED BY PERMIT TEMPLATES**

District Rule 2201	New and Modified Stationary Sources Review District
District Rule 1081	Source Sampling
District Rule 2520	Federally Mandated Operating Permits
District Rule 4623	Storage of Organic Liquids
District Rule 4661	Organic Solvents
District Rule 4801	Sulfur Compounds
40 CFR 60, 60.110	NSPS Subpart K <u>Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978</u>
40 CFR 60.110a	NSPS Subpart Ka <u>Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984</u>
40 CFR 60.110b	NSPS Subpart Kb <u>Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification commenced after July 23, 1984</u>

### **VI. REQUIREMENTS NOT FEDERALLY ENFORCEABLE**

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permits. The

terms and conditions that are part of the facility's Title V permit are designated as Federally Enforceable Through Title V Permit.

District Rule 4102 - Nuisance (Amended December 17, 1992)

For this class and category of equipment, condition 42 of the requirements for permit unit S-37-0-1.

## **VII. COMPLIANCE**

### **A. Requirements Addressed by Model General Permit Templates**

The applicant is not proposing to use a general permit template for this category of permit units. Compliance with all federally applicable requirements will be addressed in the following Section of this engineering evaluation.

### **B. Requirements Not Addressed by Model General Permit Templates**

#### **1. New and Modified Stationary Source Review**

- a. (4) 210,000 GALLON FIXED ROOF GASOLINE AND ORGANIC LIQUID STORAGE TANKS WITH VAPOR RECOVERY (Permit units S-37-12, -13, -14, & -15)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 3 from the PTO were included as conditions 1 through 3 of the requirements for this permit unit. The record retention requirement has been increased from two to five years to comply with District Rule 2520, 9.4.2.

- b. (2) 504,000 GALLON FLOATING ROOF TANKS (Permit units S-37-16, & -17)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO

were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 from the PTO was included as condition 1 of the requirements for this permit unit.

- c. (3) 420,000 GALLON FIXED ROOF GASOLINE AND ORGANIC LIQUID STORAGE TANKS WITH VAPOR RECOVERY (Permit units S-37-18, -19, & -20)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 3 from the PTO were included as conditions 1 through 3 of the requirements for this permit unit. The record retention requirement from condition 3 has been increased from two to five years to comply with District Rule 2520, 9.4.2.

- d. (2) 210,000 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANKS (permit units S-37-21 & -22)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 4 from the PTO were included as conditions 1 through 4 of the requirements for this permit unit. The record retention requirement from condition 4 has been increased from two to five years to comply with District Rule 2520, 9.4.2.

- e. 210,000 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANK (Permit unit S-37-23)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO

were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 of the PTO has been subsumed by condition 42 of the facility wide requirements.
  - Condition 2 from the PTO was included as condition 1 of the requirements for this permit unit.
  - Condition 3 from the PTO was included as condition 2 of the requirements for this permit unit.
  - Condition 4 from the PTO was not included as a requirement for this permit unit since this tank is exempt from the requirements of District Rule 4623.
  - Conditions 5 through 9 from the PTO were included as conditions 3 through 7 of the requirements for this permit unit. The record retention requirement from condition 6 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- f. (3) 126,000 GALLON ORGANIC LIQUID STORAGE TANKS (permit units S-37-24, -25, & -26)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 and from the PTO were included as conditions 1 through 2 of the requirements for this permit unit. The record retention requirement from condition 2 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- g. (1) 1,554,000 GALLON AND (1) 3,360,000 INTERNAL FLOATING CRUDE OIL STORAGE TANKS (Permit unit S-37-27 and -28)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 17 from the PTO were included as conditions 1 through 17 of the requirements for this permit unit. The record

retention requirement from condition 16 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- h. 42,000 GALLON ORGANIC LIQUID STORAGE TANK #1000 WITH VAPOR RECOVERY (permit unit S-37-31)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 11 from the PTO were included as conditions 1 through 11 of the requirements for this permit unit. The record retention requirement from condition 11 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- i. 3,360,000 GALLON FLOATING ROOF PETROLEUM STORAGE TANK #80,001 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL (Permit unit S-37-34)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 17 from the PTO were included as conditions 1 through 17 of the requirements for this permit unit. The record retention requirement from condition 16 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- j. 150,000 GALLON NAPHTHA STORAGE TANK #3300 WITH VAPOR RECOVERY (Permit unit S-37-42)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 3 from the PTO were included as conditions 1 through 3 of the requirements for this permit unit.

k. 126,000 GALLON NAPHTHA STORAGE TANK #3019 (Permit units S-37-44)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 7 from the PTO were included as conditions 1 through 7 of the requirements for this permit unit.

l. (2) 225,600 GALLON NAPHTHA STORAGE TANK #5014 WITH VAPOR RECOVERY (Permit units S-37-48 and -49)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 and 2 from the PTO were included as conditions 1 through 2 of the requirements for this permit unit. The record retention requirement from condition 2 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

m. 42,000 GALLON GASOLINE STORAGE TANK #1100 WITH VAPOR RECOVERY (Permit unit S-37-50)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 6 from the PTO were included as conditions 1 through 6 of the requirements for this permit unit. The record

retention requirement from condition 5 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- n. 840,000 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANK #20,001 WITH VAPOR RECOVERY (Permit unit S-37-51)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 10 from the PTO were included as conditions 1 through 10 of the requirements for this permit unit. The record retention requirement from condition 7 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- o. (2) 420,000 GALLON ORGANIC LIQUID STORAGE TANK #10,000 WITH VAPOR RECOVERY (Permit units S-37-52, & -53)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 11 from the PTO were included as conditions 1 through 11 of the requirements for this permit unit. The record retention requirement from condition 7 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- p. 21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #505 WITH VAPOR RECOVERY (Permit unit S-56)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 6 from the PTO were included as conditions 1 through 6 of the requirements for this permit unit. The record retention requirement from condition 6 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- q. 210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5017 SERVED BY VAPOR RECOVERY AND 29 HP CIRCULATION PUMP WITH CLAY FILTER (permit unit S-37-57)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 and 2 from the PTO were included as conditions 1 and 2 of the requirements for this permit unit.
- Condition 3 from the PTO was replaced with condition 13 of the requirements for this permit unit.
- Conditions 4 through 11 from the PTO were included as conditions 3 through 10 of the requirements for this permit unit. The record retention requirement from condition 9 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- r. 840,000 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANK #20,000 WITH VAPOR RECOVERY (Permit unit S-37-59)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 6 from the PTO were included as conditions 1 through 6 of the requirements for this permit unit. The record retention requirement from condition 6 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- s. 800 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #800 (Permit unit S-37-61)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 5 from the PTO were included as conditions 1 through 5 of the requirements for this permit unit.

t. (2) 11,256 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANK WITH VAPOR RECOVERY (permit units S-37-65 and -66)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 4 from the PTO were included as conditions 1 through 4 of the requirements for this permit unit.
- Condition 5 from the PTO was not included as a requirement for this permit unit since this tank is exempt from the requirements of District Rule 4623.
- Conditions 6 through 11 from the PTO were included as conditions 5 through 10 of the requirements for this permit unit. The record retention requirement from condition 10 has been increased from two to five years to comply with District Rule 2520, 9.4.2.

u. (2) 105,000 GALLON FIXED ROOF ORGANIC LIQUID STORAGE TANKS WITH VAPOR RECOVERY (Permit units S-37-90 and -91)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 15 from the PTO were included as conditions 1 through 15 of the requirements for this permit unit. The record retention requirement from condition 15 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- v. (2) 420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANKS (Permit units S-37-95 and -96)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 8 from the PTO were included as conditions 1 through 8 of the requirements for this permit unit. The record retention requirement from condition 7 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- w. 3,000 BBL (126,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #3012 SERVED BY VAPOR CONTROL SYSTEM S-37-8 (Permit unit S-37-97)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 7 from the PTO were included as conditions 1 through 7 of the requirements for this permit unit. The record retention requirement from condition 7 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.

- x. 1100 BBL FIXED ROOF RECOVERED ORGANIC LIQUID STORAGE TANK WITH PV VENT. (TANK #1008) (Permit unit S-37-99)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 5 from the PTO were included as conditions 1 through 5 of the requirements for this permit unit. The record retention requirement from condition 5 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- y. 10,000 BBL (420,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #10005 SERVED BY VAPOR CONTROL SYSTEM LISTED ON PTO S-37-8. (Permit unit S-37-102)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 11 from the PTO were included as conditions 1 through 11 of the requirements for this permit unit. The record retention requirement from condition 10 has also been increased from two to five years to comply with District Rule 2520, 9.4.2.
- z. 55,000 BBL CRUDE OIL TANK VENTED TO GRANULAR ACTIVATED CARBON (GAC) VAPOR CONTROL SYSTEM (Permit unit S-37-111)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 19 from the PTO were included as conditions 1 through 19 of the requirements for this permit unit.

## **2. District Rule 1081 - Source Sampling**

- a. 55,000 BBL CRUDE OIL TANK (Permit unit S-37-111-2)

District Rule 1081 was been submitted to the EPA to replace Fresno County Rule 108.1, which is SIP, approved. District Rule 1081 is as stringent as Fresno County Rule 108.1, as shown on Table 1.

Table 1: Comparison of District Rule 1081 and Fresno County Rule 108.1

REQUIREMENTS	1081 SJVUAPCD	108.1 FRESNO
Upon request of the APCO, the source shall provide info. And records to enable the APCO to determine when a representative sample can be taken.	✓	✓
The facility shall collect, have collected or allow the APCO to collect, a source sample	✓	✓
The source shall have District personnel present at a source test	✓	
The applicable test method, if not specified in the rule, shall be conducted in accordance with 40 CFR § 60, Appendix A	✓	
Test procedures: 1) arithmetic mean of three runs 2) a scheduled source test may not be discontinued solely due to the failure to meet the applicable standard(s), and 3) arithmetic mean of two runs is acceptable if circumstances beyond owner or operator control occurs.	✓	

Sections 3.0, 4.0, 5.0, 6.0, and 7.0 of District Rule 1081 set forth requirements for sampling facilities, collection of samples, test methods, test procedures, and administrative requirements, respectively. These requirements are satisfied by conditions 13 through 16 for this permit unit.

### 3. District Rule 2520, section 9.3.2 & 9.4.2 – Federally Mandated Operating Permits

- a. Organic Liquid Storage Tanks (Permit Units S-37-12-1, -13-1, -14-1, -15-2, -16-2, -17-2, -18-1, -19-1, -20-2, -21-3, -22-3, -23-3, -24-2, -25-2, -26-2, -27-1, -28-1, -31-3, -34-2, -42-1, -44-1, -48-1, -49-1, -50-2, -51-2, -52-1, -53-2, -56-1, -57-3, -59-2, -61-2, -65-2, -66-2, -90-2, -91-2, -95-2, -96-2, -97-1, -99-1, -102-2, and -111-2)

Section 9.3.2 requires that periodic monitoring be performed if none is associated with a given emission limit to assure compliance. This section allows that recordkeeping requirements may be sufficient to meet these requirements. Compliance with the requirements of this rule is assured in the conditions in the above permits.

Section 9.4.2 requires all records be maintained for at least five years. Compliance with the five-year record-keeping requirement of this rule is assured in the conditions in the above permits.

- b. Organic Liquid Storage Tanks (Permit units S-37-21-3, S-37-22-3, -23-3, -24-2, -25-2, -26-2, -31-3, -44-1, -61-2, -65-2, -66-2 and S-37-99-1)

The operator shall perform periodic inspection for leaks and maintain the equipment in good operating conditions. Records of inspections shall be kept and correction shall be taken to eliminate

emissions. Units exempted from the requirements of rule 4623 due to the condition limiting true vapor pressure (TVP) of liquid stored not exceeding 1.5 psia shall perform periodic testing to determine TVP and keep the records to demonstrate an ongoing compliance. Compliance with the requirements of this rule is assured by conditions placed on the above permit units.

**4. District Rule 4451 - Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants and 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries**

District Rule 4451 limits leaks from valves, pressure relief valves, flanges, threaded connections and process drains at petroleum refineries. Refer to the compliance section for the facility-wide requirement.

**5. District Rule 4452 - Pump and Compressor Seals at Petroleum Refineries and Chemical Plants and 40 CFR Part 60, Subpart GGG, Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries**

District Rule 4452 limits leaks from pumps and compressors and associated seals that may result in fugitive emissions of VOC at petroleum refineries. In addition, District Rule 4452 addresses test methods and recordkeeping requirements. Refer to the compliance section for the facility-wide requirement.

**6. District Rule 4623 – Storage of Organic Liquids**

The purpose of this rule is to limit VOC emissions from the storage of organic liquids. This rule applies to equipment used to store organic liquids, including crude oil and petroleum distillates, with a true vapor pressure of greater than 1.5 psia.

- a. Organic Liquid Fixed Roof Storage Tanks (Permit units S-37-21-3, -22-3, -23-3, -24-2, -25-2, -26, -2, -31-3, -44-1, -61-2, -65-2, -66-2 and -99-1)

These storage tanks store organic liquid with a true vapor pressure less than 1.5 psia. However, to maintain exemption status, the operator shall keep the record of true vapor pressures to demonstrate that the tanks have a TVP < 1.5. Conditions are added to the requirements of these permit units to assure continued exemption to this rule.

- b. Organic Liquid Storage Tanks (Permit Units S-37-12-1, -13-1, -14-1, -15-2, -16-2, -17-2, -18-1, -19-1, -20-2, -27-1, -28-1, -34-2, -42-1, -48-1, -49-1, -50-2, -51-2, -52-1, -53-2, -56-1, -57-3, -59-2, -90-2, -91-2, -95-2, -96-2, -97-1, -102-2, and -111-2)

Section 2.0 states that this rule is only applicable to equipment used to store organic liquids, including crude oil and petroleum distillates, with a true vapor pressure of greater than 1.5 psia.

Section 5.3.1 requires that any fixed roof tank with a storage capacity of 19,800 gallons or larger used to store any organic liquid, light crude oil or petroleum distillate with a true vapor pressure greater than 1.5 psia be equipped with a vapor loss prevention system capable of collecting all VOCs. These units also are required to contain a system for processing and for return to liquid storage or disposal of VOCs, so as to prevent their emission to the atmosphere at an efficiency of at least 95 percent by weight. Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

Section 5.3.2 requires that any tank gauging or sampling device on a tank vented to the vapor recovery system be equipped with a gas-tight cover. This cover shall be closed at all times except during gauging or sampling. Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

Section 5.3.3 requires that all piping, valves and fittings be constructed and maintained in a gas tight condition. Monitoring and recordkeeping supporting this requirement are addressed by conditions in the above permits.

Section 5.4 requires that any above ground tank, used for gasoline, be equipped with a pressure relief device set to within 10 percent of the maximum allowable working pressure of the container. Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

Section 6.0 requires periodic monitoring, testing and recordkeeping. Periodic monitoring consisting of maintaining a record of the liquid stored, the storage temperature, the Reid vapor pressure of that liquid during the respective storage period, and associated testing will be required. Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

- c. Organic Liquid Storage Tanks (Permit Units S-37-16-2, -17-2, -27-1, -28-1, -56-1, and -99-1)

Construction, reconstruction, or modifications of these units were commenced prior to June 11, 1973. Therefore, the requirements of 40CFR 60 Subpart K, Ka and Kb do not apply to these sources.

## 7. District Rule 4623 and 40 CFR 60, Subpart K

These requirements each contain work practice standards that will limit the emissions of volatile organic compounds (VOCs). District Rule 4623 is included in the SIP. The following analysis shows that the proposed requirement is more stringent than both District Rule 4623 and 40 CFR 60, Subpart K. Therefore, streamlining procedures, as documented in the following steps, are utilized to substitute the proposed set of requirements for the otherwise applicable requirements.

### Step 1. Side-by-side Comparison of Applicable Requirements:

CITATION	District Rule 4623	Subpart K	Proposed Requirements
WORK PRACTICE STDS.	<p>Fixed roof tank with a vapor loss prevention system for processing and for return to liquid storage or disposal of VOCs, so as to prevent their emission to the atmosphere with an efficiency of at least 95% by weight</p> <p>Any gauging or sampling device vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling</p> <p>All piping, valves, and fittings shall be constructed and maintained in a gas tight condition</p>	<p>Fixed roof tank with a vapor recovery system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases, so as to prevent their emission to the atmosphere</p>	<p>Fixed roof tank with a vapor loss prevention system for processing and for return to liquid storage or disposal of VOCs, so as to prevent their emission to the atmosphere with an efficiency of at least 95% by weight</p> <p>Any gauging or sampling device vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling</p> <p>All piping, valves, and fittings shall be constructed and maintained in a gas tight condition</p>
EMISSION LIMIT	None	None	None
MONITORING	None	None	Leak Detection and Repair program similar to that required by District Rule 4403 for oil field fugitives.
RECORDKEEPING	Maintain a record of liquid stored, storage temperature, and Reid vapor pressure	None	<p>Maintain a record of liquid stored, storage temperature, and Reid vapor pressure</p> <p>Maintain all records for a period of not less than 5 years</p>
REPORTING	None	None	None
TEST METHODS	Gas-tightness using EPA Method	None	Gas-tightness using EPA

	<p>21.</p> <p>TVP using Reid Vapor pressure by ASTM Method D323-82.</p> <p>TVP of crude oil with API gravity less than 30° as determined by API 2547 may be determined by Headspace Gas Chromatography</p> <p>Control efficiency determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system.</p> <p>VOC destruction by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds analyzed by ARB Method 422.</p>		<p>Method 21.</p> <p>TVP using Reid Vapor pressure by ASTM Method D323-82.</p> <p>TVP of crude oil with API gravity less than 30° as determined by API 2547 may be determined by Headspace Gas Chromatography</p> <p>Control efficiency determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system.</p> <p>VOC destruction by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds analyzed by ARB Method 422.</p>
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## Step 2. Select most stringent emission limit or performance standard:

The proposed requirement to use a vapor recovery system capable of collecting all VOC vapors and gases discharged from the storage vessel, along with a vapor disposal system capable of processing such VOC vapors and gases, so as to prevent their emission to the atmosphere with an efficiency of at least 95% by weight is the same as the requirement of District Rule 4623, Section 5.3. The proposed requirement is more stringent than 40 CFR 60, Subpart K.

## Step 3. Conditions ensuring compliance with applicable requirements.

The units shall be required by permit conditions to comply with the streamlined work practice standards and associated recordkeeping and testing.

## Step 4. Certify compliance

- a. **Organic Liquid Storage Tanks (Permit Units S-37-12-1, -13-1, -14-1, -15-2, -18-1, -19-1, -20-2, -21-3, -22-3, -23-3, -24-2, -25-2, -26-2, -31-3, -42-1, -48-1, -49-1, -51-2, -52-1, -53-2, -59-2, -65-2, -66-2)**

Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

## Step 5. Compliance schedule for new monitoring requirements

Not applicable.

## Step 6. Request for permit shield

These units commenced construction, modification, or reconstruction before May 19, 1978. Therefore, the requirements of 40 CFR 60 Subpart Ka and Kb do not apply to this source. A permit shield is granted from these requirements for all permit units listed above except for S-37-31, -65, & -66.

These units do not store organic materials which are liquid at standard conditions and which are used as solvents, viscosity reducers, or cleaning agents. Tank emissions are fugitive emissions not considered to come from a point source. Therefore, the requirements of District Rules 4661 (as amended December 17, 1992) and 4801 (as amended December 17, 1992) do not apply to this source. A permit shield is granted from these requirements for all permit units except S-37-31, -65, & 66.

## 8. District Rule 4623 and 40 CFR 60, Subpart Ka

### 40 CFR 60.110a

This section requires that any storage vessel in the storage capacity and true vapor pressure range covered by this template be equipped with either a floating roof, a vapor recovery system, or its equivalent.. Conditions have been added to assure compliance with external floating roof and proper closure seals.

These requirements each contain work practice standards that will limit the emissions of volatile organic compounds (VOCs). District Rule 4623 is included in the SIP. The following analysis shows that the proposed requirement is more stringent than both District Rule 4623 and 40 CFR 60, Subpart Ka. Therefore, streamlining procedures, as documented in the following steps, are utilized to substitute the proposed set of requirements for the otherwise applicable requirements.

### Step 1. Side-by-side Comparison of Applicable Requirements:

CITATION	District Rule 4623	Subpart Ka	Proposed Requirements
WORK PRACTICE STDS.	<p>Fixed roof tank with a vapor loss prevention system for processing and for return to liquid storage or disposal of VOCs, so as to prevent their emission to the atmosphere with an efficiency of at least 95% by weight</p> <p>Any gauging or sampling device vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at</p>	<p>Fixed roof tank with a vapor recovery system capable of collecting all VOC vapors and gases discharged from the storage vessel , and a vapor return or disposal system which is designed to process such VOC vapors and gases, so as to reduce their emission to the atmosphere by at least 95% by weight</p>	<p>Fixed roof tank with a vapor loss prevention system for processing and for return to liquid storage or disposal of VOCs, so as to prevent their emission to the atmosphere with an efficiency of at least 95% by weight</p> <p>Any gauging or sampling device vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed</p>

CITATION	District Rule 4623	Subpart Ka	Proposed Requirements
	all times except during gauging or sampling  All piping, valves, and fittings shall be constructed and maintained in a gas tight condition		at all times except during gauging or sampling  All piping, valves, and fittings shall be constructed and maintained in a gas tight condition
EMISSION LIMIT	None	None	None
MONITORING	None	None	Leak Detection and Repair program similar to that required by District Rule 4403 for oilfield fugitives.
RECORDKEEPING	Maintain a record of liquid stored, storage temperature, and Reid vapor pressure	None	Maintain a record of liquid stored, storage temperature, and Reid vapor pressure  Maintain all records for a period of not less than 5 years
REPORTING	None	None	None
TEST METHODS	Gas-tightness using EPA Method 21.  TVP using Reid Vapor pressure by ASTM Method D323-82.  TVP of crude oil with API gravity less than 30° as determined by API 2547 may be determined by Headspace Gas Chromatography  Control efficiency determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system.  VOC destruction by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.	None	Gas-tightness using EPA Method 21.  TVP using Reid Vapor pressure by ASTM Method D323-82.  TVP of crude oil with API gravity less than 30° as determined by API 2547 may be determined by Headspace Gas Chromatography  Control efficiency determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system.  VOC destruction by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.

**Step 2. Select most stringent emission limit or performance standard:**

The requirement to use a vapor recovery system capable of collecting all VOC vapors and gases discharged from the storage vessel, along with a vapor disposal system capable of processing such hydrocarbon vapors and gases, so as to

prevent their emission to the atmosphere with an efficiency of 95% is the same as the requirement of 40 CFR 60, Subpart Ka and District Rule 4623.

**Step 3. Conditions ensuring compliance with applicable requirements.**

The units shall be required by permit conditions to comply with the streamlined work practice standards and associated recordkeeping and testing.

**Step 4. Certify compliance**

**1. Organic Liquid Storage Tanks (Permit Units S-37-34-2, -44-1, and – 50-2)**

Compliance with the requirements of Subpart Ka is assured by conditions placed in the above permits. However section 40 CFR 60.115a(c) of this subpart does not apply to permit S-37-44-1 since the TVP of the tank is below 1.0 psia.

**Step 5. Compliance schedule for new monitoring requirements**

Not applicable.

**Step 6. Request for permit shield**

These units commenced construction, modification, or reconstruction between May 18, 1978 and July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Kb do not apply to this source. A permit shield is granted from these requirements.

These units do not store organic materials which are liquid at standard conditions and which are used as solvents, viscosity reducers, or cleaning agents. Tank emissions are fugitive emissions not considered to come from a point source. Therefore, the requirements of District Rules 4661 (as amended December 17, 1992) and 4801 (as amended December 17, 1992) do not apply to this source. A permit shield is granted from these requirements.

**9. District Rule 4623 and 40 CFR 60 Subpart Kb – Standards of Performance for Storage Vessels for Petroleum Liquids**

40 CFR 60, 60.110b

This section limits the true vapor pressure for tanks without floating roofs or vapor recovery systems storing volatile organic liquids with a storage capacity greater than or equal to 151 m<sup>3</sup> (39,890 gallons) to less than 0.75 psia. This section also limits the true vapor pressure for tanks without

floating roofs or vapor recovery systems storing volatile organic liquids with a storage capacity greater than or equal to 75 m<sup>3</sup> (19,812 gallons) but not exceeding 151 m<sup>3</sup> (39,890 gallons) to less than 4.0 psia. This section does not require tanks with a storage capacity of less than 75 m<sup>3</sup> (19,812 gallons) to have floating roofs or vapor recovery systems.

For tanks with a storage capacity greater than 151 m<sup>3</sup> (39,890 gallons) storing volatile organic liquids with a true vapor pressure less than 3.5 kPa (0.5 psia), or tanks with a storage capacity greater than or equal to 40 m<sup>3</sup> (19,812 gallons) but not exceeding 151 m<sup>3</sup> (39,890 gallons) with a true vapor pressure less than 10.3 kPa (1.5 psia), a record of tank dimensions and an analysis showing the capacity of the tank shall be maintained. If the true vapor pressure of the liquid being stored in the tank is above these limits, testing, monitoring, and recordkeeping will be required. The only permit that this section applies to is permit S-37-61 and since the TVP for permit S-37-61 is less than 0.5 psia, the only requirements required to assure compliance with this section is to maintain records of tank dimensions and analysis showing the capacity of the tank. This condition has been placed on permit S37-61.

Section 60.112b requires that any storage vessel that either:

Stores a volatile organic liquid which has a true vapor pressure of greater than or equal to 5.2 kPa (0.75 psia) for tanks with a storage capacity greater than or equal to 151 m<sup>3</sup> (39,890 gallons), or

Stores a volatile organic liquid which has a true vapor pressure of greater than or equal to 27.6 kPa (4.0 psia) for tanks with a storage capacity greater than or equal to 75 m<sup>3</sup> (19,813 gallons) but less 151 m<sup>3</sup> (39,890 gallons)

be equipped with either a floating roof, a closed vent system and control device, or its equivalent. Tanks under this Subpart are required to be equipped with a closed vent system and control device capable of collecting all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections. The control device shall be designed and operated to prevent the emission of VOC to the atmosphere with an efficiency of at least 95%. Compliance with the requirements of this section is assured by conditions placed in permits S-37-57-3, -90-2, -91-2, -95-2, -96-2, -97-1, -102-2, and -111-2.

Section 60.113b describes start up conditions consisting of an operating plan demonstrating that the control device used will prevent the emission of

VOC to the atmosphere with an efficiency of at least 95%. Compliance with the requirements of this section is assured by conditions placed in permits S-37-57-3, -90-2, -91-2, -95-2, -96-2, -97-1, -102-2, and -111-2.

If the control device used for this tank is a flare, section 60.115b requires additional monitoring and recordkeeping. Compliance with the requirements of this section is assured by conditions placed in permits S-37-57-3, -90-2, -91-2, -97-1, and -102-2.

## **VIII. PERMIT SHIELD**

The applicant is requesting a permit shield for each of the requirements listed below:

### **1. 40CFR 60 Subpart K, Ka and Kb**

- a. Organic Liquid Storage Tanks (Permit Units S-37-16-2, -17-2, -27-1, and -28-1)

Construction, reconstruction, or modifications of these units were commenced prior to June 11, 1973. Therefore, the requirements of 40CFR 60 Subpart K, Ka and Kb do not apply to these sources. A permit shield is granted from these requirements.

### **2. 40 CFR 60 Subpart K**

- a. Organic Liquid Storage Tanks (Permit Units S-37-12-1, -13-1, -14-1, -15-2, -18-1, -19-1, -20-2, -21-3, -22-3, -23-3, -24-2, -25-2, -26-2, -42-1, -48-1, -49-1, -51-2, -52-1, -53-2, and -59-2)

Compliance with permit conditions in the Title V permit shall be deemed compliance with 40 CFR 60 Subpart K and SJVUAPCD Rule 4623 (Amended December 17, 1992). A permit shield is granted from these requirements.

These units commenced construction, modification, or reconstruction before May 19, 1978. Therefore, the requirements of 40 CFR 60 Subpart Ka and Kb do not apply to this source. A permit shield is granted from these requirements.

Compliance with the requirements of Subpart K is assured by conditions placed in the above permits.

**3. 40 CFR 60 Subpart Ka**

- a. Organic Liquid Storage Tanks (Permit Units S-37-34-2, -44-1, & -50-2)

Compliance with permit conditions in the Title V permit shall be deemed compliance with 40 CFR 60 Subpart Ka and SJVUAPCD Rule 4623 (Amended December 17, 1992). A permit shield is granted from these requirements.

These units commenced construction, modification, or reconstruction between May 18, 1978 and July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Kb do not apply to these sources. A permit shield is granted from these requirements.

Compliance with the requirements of Subpart Ka is assured by conditions placed in the above permits.

**4. 40 CFR 60 Subpart Kb**

- a. Organic Liquid Storage Tanks (Permit Units S-37-57-3, -90-2, -91-2, -95-2, and -96-2)

Compliance with permit conditions in the Title V permit shall be deemed compliance with 40 CFR 60 Subpart Kb and SJVUAPCD Rule 4623 (Amended December 17, 1992). A permit shield is granted from these requirements.

These units commenced construction, modification, or reconstruction after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to these sources. A permit shield is granted from these requirements.

Compliance with the requirements of Subpart Kb is assured by conditions placed in the above permits.

**5. District Rule 4661 and District Rule 4801**

- a. Organic Liquid Storage Tanks (Permit Units S-37-12-1, -13-1, -14-1, -15-2, -16-2, -17-2, -18-1, -19-1, -20-2, -21-3, -22-3, -23-3, -24-2, -25-2, -26-2, -27-1, -28-1, -34-2, -42-1, -44-1, -48-1, -49-1, -50-2, -51-2, -52-1, -53-2, -57-3, -59-2, -90-2, -91-2, -95-2, and -96-2)

These units do not store organic materials which are liquid at standard conditions and which are used as solvers, viscosity reducers, or cleaning agents. Tank emissions are fugitive emissions not considered to come from a point source. Therefore, the requirements of District Rules 4661 (as amended December 17, 1992) and 4801 (as amended December 17, 1992) do not apply to these sources. A permit shield is granted from these requirements.

## IC ENGINES

### I. EQUIPMENT LISTING

The following is a list of equipment included in this category:

Permit#	EQUIPMENT DESCRIPTION
S-37-80	471 HP DETROIT MODEL 12V71T DIESEL FIRED IC ENGINE DRIVING AN EMERGENCY GENERATOR
S-37-81	225 HP CUMMINS MODEL NT855F1 DIESEL FIRED IC ENGINE DRIVING EMERGENCY FIREWATER PUMP
S-37-82	60 HP WAUKESHA MODEL 135 GZU-15861-G GAS-FIRED IC ENGINE POWERING EMERGENCY INSTRUMENT AIR COMPRESSOR
S-37-83	150 HP WAUKESHA MODEL 6 WAKB-10F GAS-FIRED IC ENGINE POWERING AN EMERGENCY UTILITY AIR COMPRESSOR
S-37-84	165 HP STATIONARY NATURAL GAS-FIRED INGERSOLL RAND, MODEL 6JVG (SERIAL #6AAJ226), I.C. ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE NORTH HYDROGEN COMPRESSOR AT THE PLATFORMER UNIT (#S-37-4).
S-37-85	165 HP INGERSOLL-RAND MODEL 6JVG NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE #2 HYDROGEN COMPRESSOR - MIDDLE, AT THE PLATFORMER UNIT (#S-37-4).
S-37-86	165 HP INGERSOLL-RAND MODEL 6JVG NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE #1 HYDROGEN COMPRESSOR - SOUTH, AT THE PLATFORMER UNIT (#S-37-4).
S-37-87	120 HP INGERSOLL-RAND MODEL 4JVG NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE EAST HYDROGEN COMPRESSOR AT THE UNIFIER UNIT (#S-37-3).
S-37-88	120 HP INGERSOLL-RAND MODEL 4JVG NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE WEST HYDROGEN COMPRESSOR AT THE UNIFINER UNIT (#S-37-3).
S-37-92	180 HP INGERSOLL-RAND, MODEL JVG-6, NATURAL GAS-FIRED I.C. ENGINE (SERIAL # 6AJ450) WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR) TO SERVE HYDROGEN BOOSTER COMPRESSOR AT THE PLATFORMER UNIT (S-37-4)
S-37-100	180 BHP INGERSOLL-RAND, MODEL JVG-6, GAS-FIRED IC ENGINE (SERIAL # 6BJ537) WITH NSCR DRIVING MAKEUP COMPRESSOR UNIT SERVING THE DIESEL HYDROTREATER (S-37-77)
S-37-101	180 BHP INGERSOLL-RAND, MODEL JVG-6, GAS-FIRED IC ENGINE

(SERIAL # 6BJ518) WITH NSCR DRIVING RECYCLE COMPRESSOR UNIT SERVING THE DIESEL HYDROTREATER (#S 37-77)
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## II. SCOPE OF EPA AND PUBLIC REVIEW

The applicant has not requested to utilize any model general permit templates. Therefore, the proposed permit in its entirety is subject to EPA and public review.

## III. APPLICABLE REQUIREMENTS ADDRESSED BY GENERAL PERMIT TEMPLATES

The applicant has not proposed to utilize any model general permit templates. All applicable requirements are explicitly addressed in the permit outside of the general permit templates.

## IV. APPLICABLE REQUIREMENTS NOT ADDRESSED BY GENERAL PERMIT TEMPLATES

District Rule 2201	<u>District New And Modified Stationary Source Review Rule</u>
District Rule 2520	<u>Federally Mandated Operating Permits</u> Sections 9.3.2 and 9.4.1 (Adopted June 21, 2001)
District Rule 2080	<u>Conditional Approval</u> (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 209)
District Rule 4201	<u>Particulate Matter Concentration</u> (Amended December 17, 1992) (Non SIP replacement for Kern County Rule 404)

## V. REQUIREMENTS NOT FEDERALLY ENFORCEABLE

For each Title V source, the District issues a single permit that contains the Federally Enforceable requirements, as well as the District-only requirements. The District-only requirements are not a part of the Title V Operating Permit. The terms and conditions that are part of the facility's Title V permit are designated as "Federally Enforceable Through the Title V Permit".

For this set of permit units, all requirements are federally enforceable.

## **VI. COMPLIANCE**

### **A. Requirements Not Addressed by Model General Permit Templates**

The applicant is not proposing to use a general permit template for this category of permit units. Compliance with all federally applicable requirements will be addressed in the following Section of this engineering evaluation.

### **B. Requirements Not Addressed by Model General Permit Templates**

#### **1. New and Modified Stationary Source Review**

##### **a. 471 HP Detroit Model 12V71T diesel-fired IC engine (S-37-80-1)**

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 of the PTO has been subsumed by condition 42 of the facility wide requirements.
- Condition 2 of the PTO has been included as condition 1 of the requirements for this permit unit.
- Condition 3 of the PTO has been subsumed by condition 25 of the facility wide requirements.
- Condition 4 of the PTO has been included as condition 2 of the requirements for this permit unit.
- Condition 5 of the PTO has been included as condition 3 of the requirements for this permit unit.
- Condition 6 of the PTO has been included as condition 4 of the requirements for this permit unit.
- Condition 7 of the PTO has been included as condition 5 - 8 of the requirements for this permit unit.

##### **b. 225 HP Cummins Model NT855F1 diesel-fired IC engine (S-37-81-1)**

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO

were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 of the PTO has been subsumed by condition 42 of the facility wide requirements.
- Condition 2 of the PTO has been included as condition 1 of the requirements for this permit unit.
- Condition 3 of the PTO has been subsumed by condition 25 of the facility wide requirements.
- Condition 4 of the PTO has been included as condition 3 - 6 of the requirements for this permit unit.

- c. (1) 60 HP Waukesha Model 135 GZU-15861-G gas-fired IC engine (S-37-82-1) and (1) 150 HP Waukesha Model 6 WAKB-10F gas-fired IC engine (S-37-83-1)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 of the PTO has been included as condition 2 of the requirements for this permit unit.
- Condition 2 of the PTO has been included as condition 3 of the requirements for this permit unit.
- Condition 3 of the PTO has been included as condition 4 of the requirements for this permit unit.
- Condition 4 of the PTO has been included as condition 9 and 10 of the requirements for this permit unit.

- d. (2) 165 HP Ingersoll-Rand, Model 6JVG gas-fired IC engine (S-37-84-2 and -85-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 14 of the PTO have been included as conditions 1 through 14 of the requirements for this permit unit. The record retention requirement from condition 14 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- e. (1) 165 HP Ingersoll-Rand, Model 6JVG gas-fired IC engine (S-37-86-2) & (2) 120 HP Ingersoll-Rand Model 4JVG gas-fired IC engine (S-37-87-2 & S-37-88-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Condition 1 of the PTO has been subsumed by condition 42 of the facility wide requirements.
  - Conditions 2 through 15 of the PTO have been included as conditions 1 through 14. The record retention requirement from condition 14 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- f. 180 HP Ingersoll-Rand Model JVG-6 gas-fired IC engine (S-37-92-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 16 of the PTO have been included as conditions 1 through 16 of the requirements for this permit unit. The record retention requirement from condition 14 has been increased from two to five years to comply with District Rule 2520, 9.4.2.
- g. (2) 180 HP Ingersoll-Rand, Model JVG-6 gas-fired IC Engines (S-37-100-2 & S-37-101-2)

This unit was subject to the District NSR Rule at the time the applicant applied for Authority to Construct (ATC). In accordance

with the White Paper for streamlined Development of Part 70 Permit Applications, dated July 10, 1995, conditions from the resulting PTO were addressed to define how NSR permit terms should be incorporated into the Title V permit.

- Conditions 1 through 20 of the PTO have been included as conditions 1 through 20 of the requirements for this permit unit. The record retention requirement from condition 14 has been increased from two to five years to comply with District Rule 2520, 9.4.2.

**2. District Rule 1070, Inspections - (Non SIP replacement for Kern County Rule 107)**

District Rule 1070 was been submitted to the EPA to replace Kern County APCD Rule 107. The requirements of these rules are compared below in Table 1, showing that the District Rule is at least as stringent as the County Rule.

**Table 1 - Comparison of District Rule 1070 to Kern County Rule 107**

REQUIREMENT	District Rule 1070	Kern County Rule 107
Inspections shall be made by the enforcement agency for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations.	✓	✓
The District has authority to require record keeping., to make inspections and to conduct tests of air pollution sources.	✓	✓

Section 4.0 of this rule states district's authority to require record keeping, to make inspections, and to conduct tests of air pollution sources.

- a. 471 HP Detroit Model 12V71T diesel-fired IC engine (S-37-80-1)
  - Condition 5 of the requirements for this permit unit assures compliance with this rule.
- b. 225 HP Cummins Model NT855F1 diesel-fired IC engine (S-37-81-1)
  - Condition 3 of the requirements for this permit unit assures compliance with this rule.
- c. (1) 60 HP Waukesha Model 135 GZU-15861-G gas-fired IC engine (S-37-82-1) (1) 150 HP Waukesha Model 6 WAKB-10F gas-fired IC engine (S-37-83-1)
  - Condition 9 of the requirements for this permit unit assures compliance with this rule.
- d. (3) 165 HP and (2) 120 HP gas-fired IC engines (S-37-84-2, -85-2, -86-2, 87-2, & 88-2)
  - Conditions 13 and 14 of the requirements for these permit units assure compliance with this rule.
- e. 180 HP Ingersoll-Rand gas-fired IC engine (S-37-92-2)
  - Conditions 15 and 16 of the requirements for these permit units assure compliance with this rule.
- f. Two 180 HP Ingersoll-Rand gas-fired IC engines (S-37-100-2 & S-37-101-2)

- Conditions 19 and 20 of the requirements for these permit units assure compliance with this rule.

### 3. District Rule 1081, Source Sampling

District Rule 1081 was been submitted to the EPA to replace Kern County Rule 108.1, which is in the SIP. District Rule 1081 is as stringent as Kern County Rule 108.1, as shown on Table 2.

**Table 2 - Comparison of District Rule 1081 and Kern County Rule 108.1**

REQUIREMENTS	1081 District	108.1 Kern
Upon request of the APCO, the source shall provide info. and records to enable the APCO to determine when a representative sample can be taken.	✓	✓
The facility shall collect, have collected or allow the APCO to collect, a source sample	✓	✓
The source shall have District personnel present at a source test	✓	
The applicable test method, if not specified in the rule, shall be conducted in accordance with 40 CFR § 60, Appendix A	✓	
Test procedures: 1) arithmetic mean of three runs 2) a scheduled source test may not be discontinued solely due to the failure to meet the applicable standard(s), and 3) arithmetic mean of two runs is acceptable if circumstances beyond owner or operator control occurs.	✓	

Sections 3.0, 4.0, 5.0, 6.0, and 7.0 of District Rule 1081 set forth requirements for sampling facilities, collection of samples, test methods, test procedures, and administrative requirements, respectively.

- a. (3) 165 HP and (2) 120 HP gas-fired IC engines (S-37-84-2, -85-2, -86-2, 87-2, & 88-2)
  - Conditions 6 through 10 of the requirements for this permit unit assure compliance with this rule.
- b. 180 HP Ingersoll-Rand gas-fired IC engine (S-37-92-2)
  - Conditions 8 through 12 of the requirements for this permit unit assure compliance with this rule.
- c. (2) 180 HP Ingersoll-Rand gas-fired IC engines (S-37-100-2 & S-37-101-2)
  - Conditions 11 through 15 of the requirements for this permit unit assure compliance with this rule.

#### 4. District Rule 2520 – Federally Mandated Operating Permits

Section 9.3.2 of the rule requires that periodic monitoring be performed if none is associated with a given emission limit to assure compliance. Compliance with this requirement is assured in the conditions of the following permits:

Permit Unit	Conditions
-82-1 & -83-1	6-8
-84-2, -85-2, -86-2, -87-2, & -88-2	6,7,11,12,19, 22-25
-92-2	8, 9, 13, 14, 21, & 24-27
-100-2 & -101-2	12, 16, 17, 25, & 28 -31

Section 9.4.2 contains requirements to incorporate all applicable recordkeeping requirements into the Title V permit, specific records of any required monitoring, and the retention of all required monitoring data and support information for five years. This requirement is in the conditions of the following permit units:

Permit Unit	Conditions
-80-1	5, 7-9
-81-1	3, 5-7
-82-1 & -83-1	9-10
-84-2, -85-2, -86-2, -87-2, & -88-2	11, 20, & 21
-92-2	13, 22, & 23
-100-2 & -101-2	26 & 27

#### 5. District Rule 4201 – Particulate Matter Concentration

EPA issued a relative stringency finding, dated August 20, 1996, stating that District Rule 4201 is more stringent than SIP approved Fresno County Rule 404. Section 3.0 of District Rule 4201 requires emissions to be at or below 0.1 grains of particulate matter per dry standard cubic foot of exhaust gas. This requirement is in the conditions of the following permit units:

Permit Unit	Conditions
-80-1	1
-81-1	1

-82-1 & -83-1	1
-84-2, -85-2, -86-2, - 87-2, & -88-2	16
-92-2	18
-100-2 & -101-2	22

## 6. Kern County Rule 407

County Rule 407 limits the emission of sulfur compounds to 0.2% by volume (2000 ppmv) calculated as SO<sub>2</sub>, on a dry basis averaged over 15 minutes. Operators have the option of complying with this emission limit by using certified fuels, by complying with fuel sulfur content limits, or by source testing the emission unit.

### Using Certified Diesel Fuel

Diesel -fired units limited to the combustion of distillate fuel with a sulfur content less than 0.5% shall be in compliance. The following demonstration illustrates that the proposed limitation is more stringent than the county rules.

$$\frac{\left(\frac{142 (0.5) \text{ lb } SO_x}{10^3 \text{ gal diesel}}\right)\left(\frac{23.7 \text{ L } SO_2}{\text{gmol } SO_2}\right)\left(\frac{0.035315 \text{ dscf } SO_2}{\text{L } SO_2}\right)\left(\frac{453.59 \text{ g } SO_2}{\text{lb } SO_2}\right)}{\left(\frac{9190 \text{ dscf exhaust}}{\text{MMBtu}}\right)\left(\frac{64.14 \text{ g } SO_2}{\text{gmol } SO_2}\right)\left(\frac{137 \text{ MMBtu}}{10^3 \text{ gal diesel}}\right)} = \left(\frac{0.0003 \text{ dscf } SO_2}{\text{dscf exhaust}}\right) < \left(\frac{0.002 \text{ dscf } SO_2}{\text{dscf exhaust}}\right)$$

where:

S ≡ weight % of sulfur in the oil = 0.5 = fuel sulfur limit

$\frac{142 \text{ S lb } SO_2}{10^3 \text{ gal}} = \text{uncontrolled emission factor for } SO_2 \text{ (AP-42, Table 1.3-2)}$

$23.7 \frac{\text{L}}{\text{gmol}} = \frac{(288.71\text{K})\left(22.4 \frac{\text{L}}{\text{gmol}}\right)}{273.15\text{K}} = \text{molar volume of an ideal gas corrected to District}$

standard conditions (60° F, 14.7 psi) per Charles' Law

$0.035315 \frac{\text{ft}^3}{\text{L}} = \text{conversion factor (AP42, Appendix A)}$

$453.59 \frac{\text{g}}{\text{lb}} = \text{conversion factor (AP42, Appendix A)}$

$9190 \frac{\text{dscf}}{\text{MMBtu}} = \text{F-factor, } F_d, \text{ for oil (40 CFR § 60, App. A, Meth. 19, Table 19-1)}$

$$64.14 \frac{g \cdot SO_2}{gmol} = \text{molecular weight, } SO_2$$

$$\frac{137,000 \text{ Btu}}{1 \text{ gal diesel}} = \text{higher heating value of distillate oil (AP-42, Appendix A)}$$

$$0.002 \frac{\text{parts} \cdot SO_2}{\text{parts} \cdot \text{exhaust}} = \text{Kern County Rule 407 emission limit}$$

The preceding calculation shows that for units utilizing diesel fuel with sulfur content less than 0.5%, an emission concentration of 0.03% by volume is expected; this concentration is 16.7% of that allowed by the rule.

### **Sulfur limit for non-certified liquid fuels**

$$\frac{\left( \frac{157 (S) \text{ lb } SO_x}{10^3 \text{ gal oil}} \right) \left( \frac{23.7 \text{ L } SO_2}{gmol \text{ } SO_2} \right) \left( \frac{0.035315 \text{ dscf } SO_2}{L \text{ } SO_2} \right) \left( \frac{453.59 \text{ g } SO_2}{lb \text{ } SO_2} \right)}{\left( \frac{9190 \text{ dscf exhaust}}{MMBtu} \right) \left( \frac{64.14 \text{ g } SO_2}{gmol \text{ } SO_2} \right) \left( \frac{150 \text{ MMBtu}}{10^3 \text{ gal oil}} \right)} = \left( \frac{0.002 \text{ dscf } SO_2}{\text{dscf exhaust}} \right)$$

where:

S  $\equiv$  weight % of sulfur in the oil

$$\frac{157 (S) \text{ lb } SO_2}{10^3 \text{ gal}} = \text{uncontrolled emission factor for } SO_2 \text{ (AP-42, Table 1.3-2)}$$

$$23.7 \frac{L}{gmol} = \frac{(288.71K) \left( 22.4 \frac{L}{gmol} \right)}{273.15K} = \text{molar volume of an ideal gas corrected to District standard}$$

conditions (60°F, 14.7 psi) per Charles' Law

$$0.035315 \frac{ft^3}{L} = \text{conversion factor (AP42, Appendix A)}$$

$$453.59 \frac{g}{lb} = \text{conversion factor (AP42, Appendix A)}$$

$$9190 \frac{\text{dscf}}{MMBtu} = \text{F-factor, } F_d, \text{ for oil (40 CFR § 60, App. A, Meth. 19, Table 19-1)}$$

$$64.14 \frac{g \cdot SO_2}{gmol} = \text{molecular weight, } SO_2$$

$$\frac{150,000 \text{ Btu}}{1 \text{ gal diesel}} = \text{heating value of residual oil (AP-42, Appendix A)}$$

$$0.002 \frac{\text{parts} \cdot SO_2}{\text{parts} \cdot \text{exhaust}} = \text{District Rule 4801 and Kern County Rule 407 emission limit}$$

The preceding calculation shows that an exhaust concentration of 0.2% by volume corresponds to a fuel sulfur content by weight of 3.0%. Fuel sulfur content testing shall be performed weekly except that if compliance has been demonstrated for eight consecutive weeks, then the testing frequency shall be semi-annual. In all cases, operator shall record dates that the unit is fired on non-certified fuel.

Compliance with this requirement is assured by the conditions of the following permit units:

Permit Unit	Conditions
-80-1	6
-81-1	4
-82-1 & -83-1	4 & 5
-84-2, -85-2, -86-2, - 87-2, & -88-2	15
-92-2	17
-100-2 & -101-2	21

## **ATTACHMENT A - DETAILED FACILITY PRINTOUT**

**ATTACHMENT B - INSIGNIFICANT ACTIVITIES OR  
EQUIPMENT**

The following exempt equipment was identified by Kern Oil and Refining Company (S-37) on TVFORM-003, Insignificant Activities.

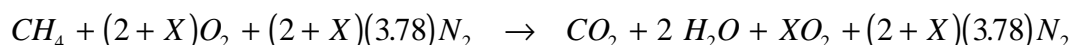
<b>Exemption Category</b>	<b>Rule 2020 Citation</b>	
Structure or incinerator associated with a structure designed as a dwelling for 4 families or less.	4.2.3	
Use of less than 2 gal/day of graphic arts materials.	5.4	
Natural gas or LPG-fired boilers or other indirect heat transfer units of 5 MMBtu/hr or less.	5.1.1	
Piston-type internal combustion engine with maximum continuous rating of 50 braking horsepower (bhp) or less.	5.1.2	
Gas turbine engines with maximum heat input rating of 3 MMBtu/hr or less.	5.1.3	
Space heating equipment other than boilers.	5.1.4	✓
Locomotives, airplanes, and watercraft used to transport passengers or freight.	5.2	
Cooling towers with a circulation rate less than 10,000 gal/min.	5.3	✓
Equipment at retail establishments used to prepare food for human consumption.	5.5.1	
Ovens at bakeries with total daily production less than 1,000 pounds and exempt by Section 5.1.1.	5.5.2	
Equipment used exclusively for extruding or compression molding of rubber or plastics, where no plasticizer or blowing agent is used.	5.6	
Containers used to store clean produced water.	5.7.1	
Containers $\leq 100$ bbl used to store oil with specific gravity $\geq 0.8762$ .	5.7.2	✓
Containers $\leq 100$ bbl installed prior to 6/1/89 used to store oil with specific gravity $\geq 0.8762$ .	5.7.3	✓
Brazing, soldering, or welding equipment.	5.10.1	
Fugitive emissions sources associated with exempt equipment.	5.10.3	
Equipment used to compress natural gas.	5.10.2	
Containers with a capacity $\leq 250$ gallons used to store organic material where the actual storage temperature $< 50$ F.	5.7.4	✓
Containers used to store unheated organic material with an initial boiling point $\geq 302$ F.	5.7.5	✓
Containers used to store fuel oils or non-air-blown asphalt with specific gravity $\geq .9042$ .	5.7.6	✓
Containers used to store petroleum distillates used as motor fuel with specific gravity $\geq 0.8251$ .	5.7.7	✓
Containers used to store refined lubricating oils.	5.7.8	✓

Exemption Category	Rule 2020 Citation	
Unvented pressure vessels used exclusively to store liquefied gases or associated with exempt equipment.	5.7.9 or 5.10.4	✓
Portable tanks used exclusively to store produced fluids for $\leq$ six months.	5.7.10	✓
Mobile transport tanks on vehicles for delivery of VOCs.	5.7.11	
Loading racks used for the transfer of less than 4,000 gal/day of unheated organic material with initial boiling point $\geq$ 302 F or of fuel oil with specific gravity $\geq$ 0.8251.	5.8.1.1	✓
Loading racks used for the transfer of asphalt, crude or residual oil stored in exempt tanks, or crude oil with specific gravity $\geq$ 0.8762.	5.8.1.2	✓
Equipment used to apply architectural coatings.	5.9.1	✓
Equipment used exclusively for the transfer of refined lubricating oil.	5.8.2	
Unheated, non-conveyorized degreasers $< 10 \text{ ft}^2$ open area; using solvents with initial boiling point $\geq$ 248 F; and $< 25 \text{ gal/yr}$ evaporative losses.	5.9.2	
Pits and Ponds as defined in Rule 1020.	5.10.6	
Non-structural repairs & maintenance to permitted equipment.	4.2.6	✓
Emissions less than 2 lb/day from units not included above.	4.2.1	✓

## **ATTACHMENT C - O<sub>2</sub>/CO<sub>2</sub> EXHAUST CONCENTRATIONS**

## NATURAL GAS

Maximum PM emissions will occur at 0% O<sub>2</sub> in the exhaust stream and District Rule 4301 requires a 12% CO<sub>2</sub> correction. For natural gas firing units, 0% O<sub>2</sub> occurs at 12% CO<sub>2</sub>. This is demonstrated by the following combustion equation for natural gas (wherein X denotes moles of excess air and (neglecting sulfur).



Solving an expression for the fraction of O<sub>2</sub> in the exhaust by volume, wherein the numerator represents the number of moles of CO<sub>2</sub> and the denominator represents the total number of moles of dry exhaust, set equal to 12% CO<sub>2</sub> yields the number of moles of excess air (X).

$$\frac{1}{1 + X + (2 + X)3.78} = 0.12 \Rightarrow X = 0.05$$

Substituting the coefficients and solving the resultant equation for the fraction of O<sub>2</sub> verifies that 12% CO<sub>2</sub> is equivalent 0% O<sub>2</sub>:

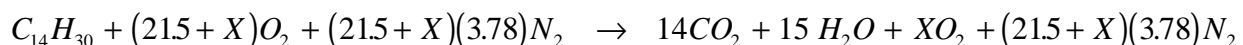


$$\frac{0.05}{1 + 0.05 + 7.75} = 0.0057 \approx 0\%$$

## FUEL OIL

For units burning fuel oil the following combustion equation, wherein X denotes moles of excess air, reveals that 12% CO<sub>2</sub> in the exhaust stream occurs at 4% O<sub>2</sub>.

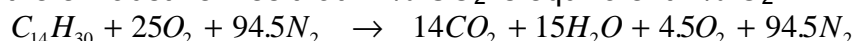
Consequently, the compliance of units firing on fuel oil is shown using AP42 F factors uncorrected from 0% O<sub>2</sub> to illustrate the worst case scenario.



Solving an expression for the fraction of O<sub>2</sub> in the exhaust by volume, wherein the numerator represents the number of moles of CO<sub>2</sub> and the denominator represents the total number of moles of dry exhaust, set equal to 12% CO<sub>2</sub> yields the number of moles of excess air (X).

$$\frac{14}{14 + X + (21.5 + X)3.78} = 0.12 \Rightarrow X = 4.5$$

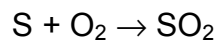
Substituting the coefficients and solving the resultant equation for the fraction of O<sub>2</sub> in the exhaust verifies that 12% CO<sub>2</sub> is equivalent 4% O<sub>2</sub>:



$$\frac{4.5}{14 + 4.5 + 94.5} = 0.039 \approx 4\%$$

## **ATTACHMENT D - SULFUR/SULFUR DIOXIDE CONVERSION**

The following analysis shows the reasoning behind the mass increase in converting sulfur to sulfur dioxide (SO<sub>2</sub>). The chemical equation for converting sulfur into sulfur dioxide is:



The preceding equation shows that 1 mole of sulfur combined with 1 mole of oxygen will create 1 mole of sulfur dioxide. The molecular weight of sulfur (S) is 32.06 grams/mole. The molecular weight of oxygen (O<sub>2</sub>) is 32.0 grams/mole. Thus, when the mole of sulfur is combined with the mole of oxygen, the resulting mole of sulfur dioxide has a mass of 64.06 grams/mole.

The preceding analysis shows that when sulfur is calculated as sulfur dioxide, the resulting mass of sulfur dioxide is twice the mass of initial sulfur converted.

## **ATTACHMENT E - GAS SULFUR CONTENT STANDARDS**

GENERAL ORDER 58-B  
(Supplemental to General Order 58-A)

## PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

### HEATING VALUE MEASUREMENT STANDARD FOR GASEOUS FUELS

Approved October 17, 1984. Effective November 16, 1984.  
(Decision 84-10-052, CII 83-11-01)

Original Order Approved December 28, 1955--Effective January 17, 1956

It is ORDERED that the following rules be adopted effective November 16, 1984 to govern all gas corporations as defined in the Public Utilities Code,\* in the determination of heating values of fuel gases. The order also is supplemental to General Order 58-A, which requires utilities to provide and maintain heating value measurement stations and shall not relieve any gas corporation from complying with the provisions of general Order 58-A.

#### 7. Purity of Gas

##### A. Hydrogen Sulfide

No gas supplied by any gas utility for domestic, commercial or industrial purposes in this state shall contain more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet.

##### B. Total Sulfur

No gas supplied by any gas utility for domestic, commercial or industrial purposes shall contain more than five (5) grains of total sulfur per one hundred (100) standard cubic feet.

C. Test procedures used to determine the amounts of hydrogen sulfide and total sulfur shall be in accordance with accepted gas industry standards and practices.

D. When hydrogen sulfide, or total sulfur, exceeds the limits set forth in Section 7.a. and Section 7.b., the gas utility shall notify the Commission and commence remedial action immediately. The Commission shall be notified when the level of hydrogen sulfide, or total sulfur, has been reduced to allowable limits.

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$$\% S \left( \frac{lb S}{lb CH_4} \right) = \left( \frac{5 gr}{100 scf} \right) \left( \frac{1 lb}{7000 gr} \right) \left( \frac{24.45 L}{mol CH_4} \right) \left( \frac{mol CH_4}{16 g} \right) \left( \frac{454 g}{1 lb} \right) \left( \frac{0.035 scf}{L} \right) (100) = 0.017\% \text{ sulfur}$$

**FERC Gas Contract**  
ARTICLE 14 - QUALITY OF GAS

14. QUALITY

14.1 Gas Quality at Delivery Point(s): The Gas delivered by Transporter for Shipper at the Delivery Point(s):

- (a) shall be merchantable Natural Gas commercially free from objectionable odors, solid matter, dust, gums, and gum forming constituents, or any other substance which interferes with its intended purpose, or causes interference with the proper and safe operation of the lines, meters, regulators, or other appliances through which it may flow;
  - (b) shall contain not more than seven (7) pounds/MMcf of water;
  - (c) shall contain no hydrocarbons in liquid form at the temperature and pressure at which the Gas is delivered at the Delivery Point;
  - (d) shall not exceed a hydrocarbon dew point of fifteen degrees (15°) Fahrenheit at pressures up to 800 psig;
  - (e) shall contain not more than 0.2% by volume of oxygen;
  - (f) shall contain not more than 3.0% by volume of carbon dioxide or nitrogen;
  - (g) shall contain not more than a combined total of 4.0% by volume of inerts, including carbon dioxide, nitrogen, oxygen and any other inert compound;
  - (h) shall contain not more than 0.25 grain of hydrogen sulfide per 100 Cubic Feet of Gas (the gas shall not contain any entrained hydrogen sulfide treatment chemical (solvent) or its by-products);
  - (i) shall contain not more than 0.3 grains of mercaptan sulfur per 100 Cubic Feet of Gas;
  - (j) shall contain not more than 0.75 grains of total sulfur per 100 Cubic Feet of Gas;
  - (k) shall not contain any toxic or hazardous substance, in concentrations which, in the normal use of the Gas, results in an unacceptable risk to health, is injurious to pipeline facilities, is a limit to merchantability or contrary to applicable governmental standards;
  - (l) shall have a minimum total heating value of not less than nine hundred seventy (970) Btu's per Cubic Foot of Gas on a dry basis;
  - (m) shall have a temperature of not less than forty degrees (40°) Fahrenheit, and not more than one hundred twenty degrees (120°) Fahrenheit.
-

$$\%S\left(\frac{lbS}{lbCH_4}\right)=\left(\frac{0.75gr}{100scf}\right)\left(\frac{1lb}{7000gr}\right)\left(\frac{24.45L}{molCH_4}\right)\left(\frac{molCH_4}{16g}\right)\left(\frac{454g}{1lb}\right)\left(\frac{0.035scf}{L}\right)(100)=0.0026\%sulfur$$

## **ATTACHMENT F - CURRENT PTOs**

## **ATTACHMENT G – EPA Comments / District Responses**

The following EPA comments were received regarding the proposed Title V Operating Permit for **Kern Oil (S-37)**. These comments are encapsulated below followed by the District's response. A copy of the EPA October 24, 2002, comment letter is available at the District.

### 1. **EPA COMMENT**

EPA recommends that the District include specific HAP emissions information in the engineering evaluation demonstrating that Kern Oil & Refining (S-37) is not considered a major HAPs source, as defined in 40 CFR 63, subject to petroleum refinery MACT standard.

#### **DISTRICT RESPONSE**

The District has previously determined that the facility Hazardous Air Pollutant emissions are below the major source threshold of HAPs, and therefore, is not subject to the Petroleum Refinery MACT Standard of 40 CFR Part 63. The engineering evaluation for Kern S-37 contains a discussion of applicability to Rule 4002. The HAP emissions for this facility are below 10 tpy of any one HAP and 25 tpy of total HAPs. The detailed list of HAP emissions is included at the end of this attachment.

### 2. **EPA COMMENT**

EPA recommends that the District include general (non-HAP) refinery emissions information in the engineering evaluation/statement of basis.

#### **DISTRICT RESPONSE**

The District performed potential emissions calculations for criteria pollutants.

	<b>Kern Oil Refinery S-0037</b>					
Permit#	Equipment Description	<b>VOC lb/year</b>	<b>NOx lb/year</b>	<b>CO lb/year</b>	<b>PM10 lb/year</b>	<b>SOx lb/year</b>
S-37-0-0	FACILITY WIDE REQUIREMENTS	0	0	0	0	0
S-37-1-5	CRUDE UNIT INCLUDING 2 DESALTERS, 4 FRACTIONATION VESSELS, STRIPPER, 2 ACCUMULATORS, DEPROPANIZER, KNOCKOUT DRUM SCRUBBER, 60 MM BTU/HR TULSA HEATERS INC. PROCESS HEATER, 60 MM BTU/HR BORN HEATER AND 15 HEAT EXCHANGERS	2,733	37,843	185,642	14,717	631
S-37-2-4	77.5 HP RERUN UNIT INCLUDING PRE-FLASH DRUM, FRACTIONATOR, STRIPPER, ACCUMULATOR, AND ASSOCIATED VALVES, FLANGES, AND CONNECTORS.	13,656	0	0	0	0
S-37-3-3	25.0 MM BTU/HR UNIFINER INCLUDING SPLITTER, STRIPPER, REACTOR, SEPARATOR, 3 ACCUMULATORS AND 3 HEATERS	1,183	35,828	55,381	1,643	626
S-37-4-6	PLATFORMER UNIT INCLUDING SEPARATOR, ADSORBER, 3 REACTORS, 4 FT. DIA. STABILIZER TOWER, ACCUMULATORS, 17.1 MMBTU/HR CHARGE HEATER #1, 8.9 MMBTU/HR CHARGE HEATER #2, 5.9 MMBTU/HR CHARGE	2,436	63,160	118,650	3,384	271

	HEATER #3, 5.5 MMBTU/HR STABILIZER REBOILER HEATER, AND 14.1 MMBTU/HR					
S-37-5-0	7 HP CAUSTIC/MEROX TREATER	N/A	0	0	0	0
S-37-6-6	49.0 MMBTU/HR COEN MODEL #D-57 NATURAL GAS FIRED INDUCED DRAFT WATER TUBE BOILER #6 REPLACEMENT STANDBY UNIT	191	3,528	10,584	265	21
S-37-7-1	112,500 BTU/HR FLARE	5	97	81	7	3
S-37-8-8	230 HP GASOLINE LOADING AREA AND REFINERY VAPOR RECOVERY SYSTEM INCLUDING GASOLINE LOADING RACK AND DIESEL LOADING RACK.	1,835	0	0	0	0
S-37-9-7	315 HP OIL/WATER SEPARATION OPERATION INCLUDING API SEPARATOR, CORRUGATED PLATE SEPARATOR, INDUCED AIR FLOATATION UNIT, DRAIN PIT, 4 FILTERS, STRIPPING COLUMN, CARBON ADSORPTION, TWO 5,000 BBL WASTE WATER TANKS, AND WASTE WATER STORAGE TANK #55000.	N/A	0	0	0	0
S-37-10-1	500 GALLON BLOWDOWN RECEIVING SYSTEM INCLUDING HORIZONTAL CAUSTIC BUBBLER SCRUBBER WITH STACK, DROP OUT PIT WITH COVER AND PIPING TO DROP OUT VESSEL	N/A	0	0	0	0
S-37-11-9	65.0 MMBTU/HR OIL/GAS FIRED ERIE CITY IRON WORKS MODEL #12M KEYSTONE BOILER (#9) WITH COEN LOW NOX BURNER	1,716	20,477	74,022	7,957	1,132
S-37-12-0	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5009 WITH VAPOR RECOVERY	20,211	0	0	0	0
S-37-13-0	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5010 WITH VAPOR RECOVERY	20,211	0	0	0	0
S-37-14-0	210,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #5011 WITH VAPOR RECOVERY	20,211	0	0	0	0
S-37-15-1	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5020 WITH VAPOR RECOVERY.	20,211	0	0	0	0
S-37-16-1	504,000 GALLON FLOATING ROOF TANK #12000	3,956	0	0	0	0
S-37-17-1	504,000 GALLON FLOATING ROOF STORAGE TANK #12001	3,956	0	0	0	0
S-37-18-0	420,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #10007 WITH VAPOR RECOVERY	38,286	0	0	0	0
S-37-19-0	420,000 GALLON FIXED ROOF GASOLINE STORAGE TANK #10008 WITH VAPOR RECOVERY	38,286	0	0	0	0
S-37-20-1	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10001 WITH VAPOR RECOVERY.	38,286	0	0	0	0
S-37-21-4	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5006.	13,761	0	0	0	0
S-37-22-4	210,000 GALLON FIXED-ROOF ORGANIC LIQUID	13,761	0	0	0	0

	STORAGE TANK #5007.					
S-37-23-5	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5008 SERVED BY REFINERY VAPOR CONTROL SYSTEM LISTED ON S-37-8	657	0	0	0	0
S-37-24-1	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3014.	13,598	0	0	0	0
S-37-25-1	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3026.	13,598	0	0	0	0
S-37-26-1	126,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #3027.	13,598	0	0	0	0
S-37-27-0	1,554,000 GALLON INTERNAL FLOATING CRUDE OIL STORAGE TANK #37,000 WITH ALTECH INDUSTRIES INTERNAL FLOATING ROOF	8,554	0	0	0	0
S-37-28-0	3,360,000 GALLON INTERNAL FLOATING ROOF CRUDE OIL STORAGE TANK #80,000 WITH ALTECH INDUSTRIES INTERNAL FLOATING ROOF	11,258	0	0	0	0
S-37-31-2	42,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #1000 WITH VAPOR RECOVERY.	1	0	0	0	0
S-37-34-1	3,360,000 GALLON FLOATING ROOF PETROLEUM STORAGE TANK #80,001 WITH METALLIC SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL	3,606	0	0	0	0
S-37-38-4	SOLVENT UNIT INCLUDING: NAPHTHA FRACTIONATOR (V-1), LIGHT SOLVENT FRACTIONATOR (V-3), V M & P NAPHTHA FRACTIONATOR (V-5), MINERAL SPIRITS FRACTIONATOR (V-7), 4 REFLUX DRUMS (V-2, V-4, V-6 AND V-8) AND 3,750,000 BTU/HR GAS FIRED FIRE TUBE HEATER (H-1)	34,252	4,818	1,226	526	16,556
S-37-42-0	150,000 GALLON NAPHTHA STORAGE TANK #3300 WITH VAPOR RECOVERY	3,779	0	0	0	0
S-37-43-0	15 HP LIGHT SOLVENT TRUCK LOADING OPERATION WITH VAPOR CONTROL SYSTEM INCLUDING: EMCO WHEATON LOADING HOSE AND VAPOR RETURN COUPLERS, 15 PUMP, METER AND CHECK VALVES AND VAPOR RETURN PIPING TO VAPOR CONTROL SYSTEM	1,752	0	0	0	0
S-37-44-2	3,000 BBL NAPHTHA STORAGE TANK #3019	5,220	0	0	0	0
S-37-46-1	30 HP LIQUID LOADING OPERATION INCLUDING ONE UNCONTROLLED LIQUID LOADOUT LINE, ONE ORGANIC LIQUID LOADOUT LINE EQUIPPED WITH VAPOR RECOVERY, TWO 15 HP PUMPS, DRY-BREAK CONNECTORS, METER(S), AND CHECK VALVES.	11,352	0	0	0	0
S-37-48-0	225,600 GALLON NAPHTHA STORAGE TANK #5014 WITH VAPOR RECOVERY	5,726	0	0	0	0
S-37-49-0	225,600 GALLON PETROLEUM STORAGE TANK #5015 WITH VAPOR RECOVERY	19,096	0	0	0	0
S-37-50-1	42,000 GALLON GASOLINE STORAGE TANK #1100 WITH VAPOR RECOVERY	1,840	0	0	0	0
S-37-51-1	840,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #20001 WITH VAPOR	2,555	0	0	0	0

	RECOVERY.					
S-37-52-1	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10000 WITH VAPOR RECOVERY.	1,059	0	0	0	0
S-37-53-1	420,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #10002 WITH VAPOR RECOVERY.	1,059	0	0	0	0
S-37-56-0	21,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #505 WITH VAPOR RECOVERY	1,051	0	0	0	0
S-37-57-2	210,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #5017 SERVED BY VAPOR RECOVERY AND 29 HP CIRCULATION PUMP WITH CLAY FILTER.	3,869	0	0	0	0
S-37-58-0	29 HP JP-4 TRUCK LOADING OPERATION INCLUDING TWO EMCO WHEATON API STYLE DRYBREAK BOTTOM LOADING COUPLERS AND HOSES, TWO OPW MODEL 633 VAPOR RECOVERY COUPLERS AND VAPOR RETURN HOSES, 29 HP UNLOADING PUMP, FILTER, AND METER AND CHECK VALVES	5,519	0	0	0	0
S-37-59-1	840,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #20000 WITH VAPOR RECOVERY.	4,271	0	0	0	0
S-37-61-0	800 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #800	730	0	0	0	0
S-37-65-1	11,256 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK (DEHY NORTH) WITH VAPOR RECOVERY.	12	0	0	0	0
S-37-66-1	11,256 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK (DEHY SOUTH) WITH VAPOR RECOVERY.	12	0	0	0	0
S-37-67-1	8,400 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #200 WITH VAREC P/R VALVE, 1 HP PUMP, AND TRUCK UNLOADING FILL LINE WITH DRY-BREAK COUPLER.	2,117	0	0	0	0
S-37-71-0	25 HP ETHANOL TRUCK RECEIVING AND LOADING OPERATION INCLUDING TRUNK UNLOADING CONNECTION, TRUCK LOADING HOSE WITH DRY BREAK COUPLER, VAPOR RECOVERY HOSE WITH DRY BREAK CONNECTOR AND PIPING TO PERMIT S-37-56	223	0	0	0	0
S-37-77-6	DIESEL HYDROTREATER UNIT	1,205	7,446	37,924	2,811	4,088
S-37-78-0	335 HP SULFUR SCRUBBING SYSTEM	0	0	0	0	153,424
S-37-79-0	14,700 GALLON ABOVE GROUND GASOLINE STORAGE TANK EQUIPPED WITH ONE (1) DISPENSING NOZZLE AND CARB CERTIFIED VAPOR BALANCE SYSTEM CONNECTED TO VAPOR RECOVERY SYSTEM LISTED ON PERMIT #S-37-8.	1,132	0	0	0	0
S-37-80-0	471 HP DETROIT MODEL 12V71T DIESEL FIRED IC ENGINE DRIVING AN EMERGENCY GENERATOR	589	7,301	1,578	518	495

S-37-81-0	225 HP CUMMINS MODEL NT855F1 DIESEL FIRED IC ENGINE DRIVING EMERGENCY FIREWATER PUMP	281	3,488	754	248	236
S-37-82-0	ONE 60 BHP WAUKESHA MODEL 135 GZU-15861-G GAS-FIRED IC ENGINE POWERING EMERGENCY INSTRUMENT AIR COMPRESSOR	8	562	946	5	1
S-37-83-0	ONE 150 BHP WAUKESHA MODEL 6 WAKB-10F GAS-FIRED IC ENGINE POWERING AN EMERGENCY UTILITY AIR COMPRESSOR	19	1,405	2,365	12	2
S-37-84-3	165 HP STATIONARY NATURAL GAS-FIRED INGERSOLL RAND, MODEL 6JVG (SERIAL #6AAJ226), I.C. ENGINE EQUIPPED WITH 3-WAY CATALYST SERVING THE NORTH HYDROGEN COMPRESSOR AT THE PLATFORMER UNIT (#S-37-4).	3,926	2,256	54,942	238	35
S-37-85-3	165 HP INGERSOLL-RAND MODEL 6JVG NATURAL GAS-FIRED IC ENGINE (SERIAL # 6AJ372) EQUIPPED WITH 3-WAY CATALYST SERVING THE #2 HYDROGEN COMPRESSOR-MIDDLE AT THE PLATFORMER UNIT (#S-37-4).	3,926	2,256	54,942	238	35
S-37-86-3	165 HP INGERSOLL-RAND MODEL 6JVG NATURAL GAS-FIRED IC ENGINE (SERIAL # 6AJ371) EQUIPPED WITH 3-WAY CATALYST SERVING THE #1 HYDROGEN COMPRESSOR-SOUTH AT THE PLATFORMER UNIT (#S-37-4).	3,926	2,256	54,942	238	35
S-37-87-3	120 HP INGERSOLL-RAND MODEL 4JVG NATURAL GAS-FIRED IC ENGINE (SERIAL # 4AJ494) EQUIPPED WITH 3-WAY CATALYST SERVING THE EAST HYDROGEN COMPRESSOR AT THE UNIFIER UNIT (#S-37-3).	2,855	1,641	39,958	173	25
S-37-88-3	120 HP INGERSOLL-RAND MODEL 4JVG NATURAL GAS-FIRED IC ENGINE (SERIAL # 4BJ653) EQUIPPED WITH 3-WAY CATALYST SERVING THE WEST HYDROGEN COMPRESSOR AT THE UNIFINER UNIT (#S-37-3).	2,855	1,641	39,958	173	25
S-37-90-1	105,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE STORAGE TANK #2501 WITH VAPOR RECOVERY.	365	0	0	0	0
S-37-91-1	105,000 GALLON FIXED-ROOF ORGANIC LIQUID STORAGE TANK #2502 WITH VAPOR RECOVERY.	803	0	0	0	0
S-37-92-1	180 HP INGERSOLL-RAND, MODEL JVG-6, NATURAL GAS-FIRED I.C. ENGINE (SERIAL # 6AJ450) WITH NON-SELECTIVE CATALYTIC REDUCTION (NSCR) TO SERVE HYDROGEN BOOSTER COMPRESSOR AT THE PLATFORMER UNIT (S-37-4)	4,283	2,461	59,936	259	38
S-37-93-0	TRUCK LOADING RACK, INCLUDING 4 FUEL OIL LOADING SPOTS AND 2 ATMOSPHERIC GAS OIL (AGO) LOADING SPOTS	22,860	0	0	0	0
S-37-94-0	RAILCAR LOADING RACK, INCLUDING 6 DIESEL FUEL LOADING SPOTS	0	0	0	0	0

S-37-97-0	3,000 BBL (126,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #3012 SERVED BY VAPOR CONTROL SYSTEM S-37-8	511	0	0	0	0
S-37-99-0	1100 BBL FIXED ROOF RECOVERED ORGANIC LIQUID STORAGE TANK WITH PV VENT. (TANK #1008)	21	0	0	0	0
S-37-100-1	180 BHP INGERSOL-RAND, MODEL JVG-6, GAS-FIRED IC ENGINE (SERIAL # 6BJ537) WITH NSCR DRIVING MAKEUP COMPRESSOR UNIT SERVING THE DIESEL HYDROTREATER (S-37-77)	4,283	2,461	59,936	241	30
S-37-101-1	180 BHP INGERSOL-RAND, MODEL JVG-6, GAS-FIRED IC ENGINE (SERIAL # 6BJ518) WITH NSCR DRIVING RECYCLE COMPRESSOR UNIT SERVING THE DIESEL HYDROTREATER (#S 37-77)	4,283	2,461	59,936	241	30
S-37-102-1	10,000 BBL (420,000 GALLON) FIXED ROOF ORGANIC LIQUID STORAGE TANK #10005 SERVED BY VAPOR CONTROL SYSTEM LISTED ON PTO S-37-8.	13,396	0	0	0	0
S-37-105-0	SOIL AND GROUNDWATER REMEDIATION PROJECT SERVED BY A VACLEAN 1000-2 INTERNAL COMBUSTION ENGINE WITH A 3-WAY CATALYTIC CONVERTER	266	234	18	204	172
		<b>VOC</b>	<b>NOx</b>	<b>CO</b>	<b>PM10</b>	<b>SOx</b>
	<b>Potential to Emit Total lb/year</b>	<b>497,043</b>	<b>203,618</b>	<b>913,719</b>	<b>34,096</b>	<b>177,911</b>
	Major source thresholds lb/year	50,000	50,000	200,000	140,000	140,000

### 3. EPA COMMENT

The Title V permit describes permit unit S-37-6-3 as a 49 MMBtu/hr replacement standby unit for S-37-11. Permit S-37-6-3, condition 24, states that the NOx emission rate shall not exceed 95 ppmvd @3%O2 and cites Rule 4351. However, this limit does not appear to comply with Rule 4351, Section 5.2.2, which limits NOx emissions to 30 ppmvd (gaseous fired) and 40 ppmvd (liquid fired). Although S-37-6-3 is described as a replacement standby unit, this unit does not appear to qualify for a rule exemption pursuant to Rule 4351, Section 4.0, Exemptions.

EPA recommends that the District revise unit permit S-37-6-3, condition 24 to comply with the NOx limits of Rule 4351, Section 5.2.2.

EPA recommends that the District revise unit permit S-37-6-3, condition 24 to comply with the NOx emissions requirements of Rule 4351, Section 5.2.2.

### ***DISTRICT RESPONSE***

Permit unit S-37-6 is in compliance with all applicable requirements of District Rule 4351 Boilers, Steam Generators, and Process Heaters - Reasonably Available

Control Technology. Section 5.1 of Rule 4351 requires RACT emissions limits for NOx to be limited to the following:

	Gaseous Fuel	Distillate Oil	Residual Oil	Crude Oil
Units Except Natural & Induced Draft Units	95 ppmv or 0.10 lb/MMBtu	115 ppmv or 0.15 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu	165 ppmv or 0.22 lb/MMBtu
Natural & Induced Draft Units	147 ppmv or 0.18 lb/MMBtu	155 ppmv or 0.20 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu	194 ppmv or 0.25 lb/MMBtu

Section 5.2 of Rule 4351 was placed in the rule to allow for an alternative compliance schedule for those units that were required to comply with the more stringent BARCT requirements of District Rule 4305. Section 5.2 is an option for owners or operators “in lieu of complying with the NOx limits in sections 5.1.” However, this unit was not subject to the emission limit requirements of Rule 4305, because it is a replacement standby unit. Consequently, this unit did not elect to comply with the alternative emission limits and compliance schedule of Section 5.2.

#### **4. EPA COMMENT**

Several of the fixed roof tank unit permits contain a requirement which states that “emissions from components which have been tagged by the facility operator for require within 15 calendar days or which have been repaired and are awaiting re-inspection shall not be in violation of this permit.” The permit condition cites District Rule 2520.9.3.2. However, nothing in District Rule 2520 or 4623 relieves the source of being in violation when a leaking component has been tagged or is waiting re-inspection. EPA recommends that this permit condition be removed from the fixed roof tank permit.

#### ***DISTRICT RESPONSE***

The District removed this condition as requested.

#### **5. EPA COMMENT**

Title V permits must contain a compliance schedule for all requirements for which the facility is not currently in compliance. See Rule 2520, 9.14-15 and 40 CFR Parts 70.6(c)(3) and 70.5(c)(8)(iii)(A), (B), and (C). The District did not include in the engineering evaluation/statement of basis either an evaluation of Kern Oil’s compliance status or any compliance schedule(s) as required by District Rule 2520 and 40 CFR Part 70.

#### ***DISTRICT RESPONSE***

The engineering evaluation demonstrates that the facility is in compliance with all the applicable requirements. Compliance schedule shall not be required.



## **ATTACHMENT H – Public Comments / District Responses**



## PUBLIC COMMENTS

Public comments regarding the District's analysis and preliminary decision were submitted by Our Children's Earth. A copy of the October 9, 2002 OCE letter containing the comments is available at the District.

### **Equilon Enterprises (S-34); Kern Oil and Refining (S-37); Tricor Refining, LLC (S-44), AERA Energy, (S-1547) Comments**

#### **I. General Permit Template Usage—Tricor Refinery, Kern Oil, and Aera Energy**

##### ***OCE Comment:*** Facility-Wide Umbrella General Permit Templates

*The District states that for permit applications utilizing the model general permit templates, public and agency comments on the District's proposed actions are limited to, inter alia, the applicant's eligibility for the model general permit template. In regards to the applicants' eligibility for the model general permit template, the District merely states "[b]ased on the information submitted in the Template Qualification Form, the applicant qualifies for the use of this template." See Proposed Engineering Evaluation. The District failed to include a statement of basis discussing the factual data on which the District based its decision to grant Tricor Refinery's, Kern Oil's, and Aera Energy's use of the general permit template. In addition, the District failed to include a summary of the methodology used in obtaining the data and in analyzing the data submitted to the District in the named facilities' applications. These three draft permits leave the public and regulators in the dark as to why "the applicant[s] qualif[y] for the use of th[e] [general permit] template." Id.*

**District Response:** As we noted in the application review, which acts as the statement of legal and factual basis for the proposed permit, the decision to grant Tricor Refinery's, Kern Oil's, and Aera Energy's use of the general permit template was based on the analysis provided in the template qualification form. The qualification form, which was subject to EPA and public review at the time the template was issued, defines the specific circumstances under which facilities are allowed to use the template, a step-by-step demonstration of qualification, and does not leave regulators or the public "in the dark" as you suggest.

#### **II. Facility-Wide Requirements—Mckittrick's, Chalk Cliff's, Chemical Waste Management's, Equilon Enterprises's, and Castle Peak's Draft Title V Permits**

##### ***OCE Comment #1:*** Insufficient Emergency Provisions.

*Facility-Wide Requirement 1, under Equilons, Chalk Cliffs, Chemical Waste*

*Management, and Castle Peak's draft permits, link the term "breakdown" to the definitions provided in District Rule 1100. However, the definition of "breakdown" in Rule 1100 is significantly different from the federal definition of a breakdown, which is provided in the U.S. Environmental Protection Agency's (EPA's) regulation for State Operating Permit Programs (40 CFR Part 70). In 40 CFR 70.6(g), EPA clearly defines emergencies as arising from, "sudden and reasonably unforeseeable events...which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation..." The District's definition does not contain this language and therefore does not fulfill the requirements of the Clean Air Act (CAA). Regarding emergency provisions, we believe that the language of the Title V Draft Permit should follow the language provided in the federal regulation very closely, if not word-for-word.*

**District Response:** Section 13.4.2 of Rule 2520 states that provisions of District Rule 1100 (Breakdowns) apply in addition to the provisions of that section. The purpose of facility wide requirement 1 is to assure compliance with the requirements of District Rule 1100 and to compel prompt reporting. This reporting, however, does not grant facilities an affirmative defense unless the provisions listed under Section 13.4.1 which are identical to those listed under 40 CFR 70.6(g). Facility wide requirement 1 assures compliance with District Rule 1100 without contradicting federal requirements. Therefore, the breakdown provisions of the proposed permit are consistent with the requirements of the District's approved Title V program and are not insufficient.

**OCE Comment #2:** *Insufficient Monitoring/Reporting Requirements.*

*Facility-Wide Requirement 10 in Equilon Enterprise's, Tricor's, Aera Energy's, and Kern Oil's Draft Permits, states that the operator shall submit reports of any required monitoring at least every six months. The Draft Permits should be absolutely clear about what monitoring requirements must be covered in the 6 month monitoring reports. Facility-Wide Requirement 10 is not sufficiently clear.*

*We suggest the following language: "The source is required to comply with the following monitoring requirements and include such reports in the six month monitoring reports." Such language is necessary to ensure that the District, U.S. EPA, permit holder and the public are aware of the monitoring and reporting requirements in the permit. This language would then need to be followed by a precise list of the applicable monitoring and reporting requirements.*

*Finally, in Tricor's and Aera Energy's draft Title V permits, the District incorrectly cites District Rule 2520, 9.6.1 as the applicable rule requiring 6 month monitoring reports. Instead, District Rule 2520, 9.5.1 is the proper rule.*

**District Response:** All applicable monitoring requirements are already included in the proposed permit and can be readily identified by reviewing the conditions for each permit unit, so monitoring and reporting requirements are not insufficient. The “precise list” of monitoring requirements that you recommend we add to condition 10 would be redundant.

The section numbers in the draft permit were based on a previous version of District Rule 2520. The numbers will be updated to reflect the current version at the time of final action.

*OCE Comment #3: Lack of “Practically Enforceable” Conditions in Equilon Enterprise’s, Tricor’s, Aera Energy’s, and Kern Oil’s Draft Permits.*

*According to the CAA, conditions in a Title V permit must be “practically enforceable.” Therefore a permit requirement must make it possible to determine whether the facility is complying with the condition. Specifically, all Title V permits are legally required to incorporate all applicable record keeping requirements, and, where applicable, records of required monitoring must include the following:*

- 1) The date, time, and place of sampling or measurements;*
- 2) The dates analyses were performed;*
- 3) The company or entity that performed the analyses;*
- 4) The analytical techniques or methods used;*
- 5) The results of such analyses; and*
- 6) The operating conditions existing at the time of sampling or measurement.*

*40 CFR 70.6(a)(3)(ii)(A); District Rule 2520, 9.4.1. Reports of all required monitoring must be submitted at least every six months. Reports are required to identify all instances of deviations from permit requirements and must be certified by a responsible official. See 40 CFR 70.6(a)(3)(iii)(A); District Rule 9.13.1 and 10.0. Facility-Wide Requirements 23-25, 27-34, and 29-34 under Equilon Enterprise’s, Tricor’s, Kern Oil’s, and Aera’s Draft Permit[s] do not include any monitoring and reporting requirements to determine whether the facility is in compliance with Facility-Wide Requirements 23-25, 27-34, and 44-45. Thus, Facility-Wide Requirements 23-25, 27-34, and 44-45 are not “practically enforceable” because there is no way to determine whether the facility is in compliance with those conditions.*

**District Response:** Facility-wide conditions 23-27 and 29-34 include general requirements (e.g., labeling requirements for any containers used for architectural coatings) that may apply to certain insignificant activities that could occur at the facility (e.g., a temporary architectural coating operation exempt from permitting requirements under Section 6.8.1 of District Rule 2020). These types of operations that are exempt from permitting were designated in the District’s approved Title V program as insignificant. These requirements are practically enforceable in the permit as written. The source is still required to report deviations from these requirements under Facility

wide condition 11, and to certify compliance with each of these requirements annually under condition 35. The annual certification must include the identification of the permit term, the compliance status, the method the source operator used to determine the compliance status, and any other facts required by the district to determine the compliance status. Also, if a violation were observed during an EPA or District inspection (e.g., an uncovered can of house paint was found at the facility), enforcement action could still be taken. However, permit modifications/additions will be required if the facility were to begin conducting these activities in a manner or at a level that required a permit (a level not exempt under Rule 2020). Specific monitoring requirements would be added at the time the operation was permitted.

***OCE Comment #4: Legal Insufficiency of the Schedule of Compliance Section.***

*A Title V permit must “assure compliance” with all applicable requirements. See 40 CFR § 70.1(b). Specifically, 40 CFR § 70.7(a)(1)(iv) provides that a permit may only be issued if “the conditions of the permit provide for compliance with all applicable requirements.” The proposed refinery permits subject to these comments do not assure compliance. In particular, the status of the proposed Title V facilities’ current compliance and future ability to comply with all applicable requirements is unclear.*

*All Title V permits are legally required to contain a compliance schedule as follows: 1) for applicable requirements with which the source is in compliance, a statement that the source will continue to comply with such requirements; 2) for applicable future requirements that will become effective during the permit term, a statement that the source will comply with such requirements on a timely basis; 3) a schedule of compliance for sources that are not in compliance with all applicable requirements at the time of permit issuance, including a schedule of remedial measures with an enforcement sequence of actions leading to compliance. 40 CFR 70.6(c)(3); and 70.5(c)(8)(iii)(A), (B), and (C); District Rule 2520, 9.8.1<sup>7</sup>, 9.13.1, and 9.14. In addition to the schedule of compliance, all Title V permits are required to contain a statement of compliance. District Rule 2520, 10.0.*

*The schedule of compliance section, in the relevant part, reads as follows:*

*The permittee must comply with all conditions of the permit including permit revisions originated by the District....*

*This statement is legally insufficient. The specific contents of a compliance schedule are determined by the status of a source’s compliance at the time the permit is issued. For example, if a source is currently in compliance, the compliance schedule must state*

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<sup>7</sup>Note: The District has again incorrectly cited District Rule 2520, 9.9.1 under condition 5 in Tricor’s and Aera Energy’s draft Title V permits. The correct District Rule is Rule 2520, 9.8.1.

*that the source will “continue to comply.” If there are future requirements, the schedule must state that the source must comply with them on a timely basis. If the source is not in compliance, the schedule should include a plan for the source to come into compliance.*

*The schedule of compliance section presented in the proposed permits, identified above, does not indicate the sources’ current status of compliance, nor is a statement of compliance presented elsewhere in the facilities’ permits. The schedule also lacks the following components: 1) a statement that the sources will “continue to comply,” 2) whether there are future requirements that will become effective during a specific permit’s term, 3) language that the source must comply with future requirements “on a timely basis,” should the source be out of compliance, 4) a schedule of remedial measures and actions the source must take to come into compliance. These above omissions are inconsistent with federal law and District regulations.*

*One of the purposes of the Title V permitting program was to enable the public, sources, the state, and EPA to better understand a source’s requirements under its permit and whether the source is meeting those requirements. Operating Permit Program, 57 Fed.Reg. 32,295 (1992). The District’s failure to include the legally required information in the schedules of compliance defeats this purpose, and strips the schedules of their practical use.*

*In fact, the above language used in each of the proposed permits is a blanket statement that the District used for all of its Title V permits. As stated, such a blanket statement is legally insufficient and of no practical use.*

*The reader should not be required to infer that a source is in compliance simply by the District’s omission of contrary language. In fact, in some instances such an inference may be incorrect.*

**District Response:** In accordance with section 9.14 of District Rule 2520, a compliance schedule is required “for sources in violation of any applicable requirement”. This source certified compliance with the applicable requirements in their initial application, and compliance with each applicable requirement was demonstrated in the Compliance section of the application review. Therefore, a compliance schedule was not required for this permit.

In addition to a compliance schedule “for sources in violation of any applicable requirement”, section 9.14 of Rule 2520 also requires a statement that the sources will continue to comply. This is addressed in condition 5, which requires that the permittee comply with all conditions of the permit including any revisions originated by the District. Because applicable requirements with future effectiveness dates are included as permit terms, the permit also assures that the permittee will comply with requirements with future effectiveness dates, as required by Section 9.14.3 of Rule 2520. Therefore, the condition is legally sufficient to satisfy the requirements of Section 9.14 of Rule 2520.

**OCE Comment #III.:** *Failure to Include a sufficient Statement of Basis with the Draft*

*Permit. The limited information provided in the Permit Application Review is inadequate—Equilon Enterprise’s, Kern Oil’s, Tricor’s, and Aera Energy’s Draft Title V Permits*

*According to 40 CFR § 70.7(a)(5), the District must provide a statement that sets forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory and regulatory provisions. While this regulation is ambiguous as to whether the Statement of Basis must be included as part of the Draft Permit, we believe that it should be.*

*As you know, the purpose of the Statement of Basis is to provide an explanation of why the permit contains the provisions it does and why it does not contain other provisions that might otherwise be applicable. In other words, the Statement should set out the factual context for the Permit requirements. Along with the Permit Application, it provides a “background” for both decisions made by the District as well as efforts at meaningful public review. Without the Statement of Basis, effective public review is hindered. It makes sense that the District would incorporate the full Statement of Basis into Draft Permit so as to facilitate public review. Maintaining the Statement of Basis as a separate document, kept at the District Office makes one more document for interested parties to request. The practice of not incorporating the District’s analysis of the legal and factual basis for Permit actions into the Draft Permit itself implies to interested parties that all the information needed to effectively review or consult a Permit is contained within the Permit itself. This is simply not so.*

*As written, the Draft Permits contain little in the way of factual information about any of the facilities’ operations. The Permit Application Review references Attachments (the Detailed Facility Printouts) for a list of permitted equipment. The lists are of limited usefulness as tools for the public to comprehend the facilities’ operations. The Detailed Facility Printout simply gives a very brief description of particular pieces of equipment. They do not list the emissions that come from that particular piece of equipment and leaves the non-expert public in the position of guessing as to even the most general functional aspects of a facility’s operation. With the information as offered in the Detailed Facility Printouts, the interested public cannot be expected to adequately understand what type of facility is being permitted, what type of equipment is being used and for what processes, and what emissions are resulting. We believe the District should incorporate into its Statement of Basis, a much more lucid explanation of the facility, its emissions sources and abatement equipment, and its overall operational/manufacturing processes.*

*While descriptions of the facility and its process are contained in the permit application, they should be incorporated into the Draft Permit, as part of the Statement of Basis, not a mere list, included as an attachment. By including the legal and factual basis along the District’s Draft Permits (including a detailed description of the facility, its emissions*

*sources and abatement equipment, and its operational process), the Draft Permits move closer to becoming clear, comprehensive and informative documents. Such comprehensive Draft Permits will allow interested parties to effectively review what type of facility is being permitted, the applicable requirements and the reasons for those requirements upon which comments can be based.*

**District Response:** Each draft permit condition also includes a rule reference that identifies the underlying rule or regulation for each condition and a comprehensive equipment description is included in the permit for each permit unit. (e.g., EMERGENCY FIRE WATER PUMP POWERED BY 244 HP CUMMINS DIESEL-FIRED INTERNAL COMBUSTION ENGINE EQUIPPED WITH TURBOCHARGER, INTERCOOLER AND POSITIVE CRANKCASE VENTILATION). The application review further describes what type of facility is being permitted, the applicable requirements including a specific description of how compliance with each applicable requirement is assured in the permit, and the reasons for those requirements upon which comments can be based.

The federal Title V regulations in 40 CFR part 70.6, which are very prescriptive with regards to permit content, do not include provisions for including the statement of basis in the draft permit as you recommend. Including the full statement of basis in the Title V permit would unnecessarily make the permit more complex and less understandable. The application review, which acts as a statement of basis, is provided to the public free of charge upon request along with the draft permit, so there is no reason for incorporating the application review into the draft V permit.

Other more detailed information about the facility that the applicant is required to provide as part of a Title V permit application package (emissions, certifications, etc.) is also available upon request

***OCE Comment #IV.: Draft Permits refer to incorrect Facility-Wide Requirements***

*Throughout the Facility-Wide Requirements (Requirement(s)) in the draft Title V permits that the District proposes to issue to the facilities subject to these comments, the District cites incorrect applicable rules. For example:*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 10 denotes the requirements regarding the frequency of monitoring reports. San Joaquin Valley APCD District Rule 2520, 9.6.1 is referenced as the corresponding District Rule. District Rule 2520, 9.6.1 explains that emissions authorized by allowances under the acid rain program are excepted from this requirement. The proper corresponding District Rule is 2520, 9.5.1.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 11 provides details for the prompt reporting of deviations from the permit conditions. San Joaquin Valley APCD District Rule 2520, 9.6.2 is referenced as the corresponding District Rule. District Rule 2520, 9.6.2 addresses the proper use of allowances under the acid rain program. The proper corresponding District Rule is 2520, 9.5.2.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 12 is the Permit's severability clause. San Joaquin Valley APCD District Rule 2520, 9.8 is referenced as the corresponding District Rule. District Rule 2520, 9.7 is the proper corresponding as it lists the severability clause one of the necessary Permit requirements.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 16 provides requirements for the furnishing of information to the District necessary for the District's consideration of possible modification, revocation, reissuance or termination of a permit. San Joaquin Valley APCD District Rule 2520, 9.9.5 is referenced as the corresponding District Rule. District Rule 2520, 9.8.5 is the proper corresponding District Rule, as it denotes the same requirements.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirements 18, 19, 20, and 21 set out the District's inspection authority. San Joaquin Valley APCD District Rule 2520, 9.14.2.1, 9.14.2.2, 9.14.2.3, and 9.14.2.4, respectively are cited as the District's authority. However, the proper citation to the District's inspection authority is found at District Rule 2520, 9.13.2.1, 9.13.2.2, 9.13.2.3, and 9.13.2.4, respectively.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 28 sets out each facilities' responsibility to certify documents submitted to the District. The District incorrectly cites District 2520, 9.14.1. The proper District Rule is Rule 2520, 9.13.1 and 10.0.*

*In Tricor's and Aera Energy's draft permits, Facility-Wide Requirement 35 lists the requirements needed in a certification of compliance. San Joaquin Valley APCD District Rule 2520, 9.17, which mandates that general permit templates, if used, shall be used without modification, is referenced as the corresponding District Rule. District Rule 2520, 9.16 is the proper corresponding District Rule, as it denotes the requirements of certifications of compliance.*

**District Response:** The section numbers in the draft permit were based on a previous version of District Rule 2520. The numbers will be updated to reflect the current version at the time of final action.

**OCE Comment #V.:** Permit Unit Requirements contain Insufficient Monitoring, Record

## *Keeping, and Reporting Requirements.*

*As stated above, according to the CAA, conditions in a Title V permit must be “practically enforceable.” Therefore a permit requirement must make it possible to determine whether the facility is complying with the condition. Specifically, all Title V permits are legally required to incorporate all applicable record keeping requirements, and, where applicable, records of required monitoring must include the following:*

- 1) The date, time, and place of sampling or measurements;*
- 2) The dates analyses were performed;*
- 3) The company or entity that performed the analyses;*
- 4) The analytical techniques or methods used;*
- 5) The results of such analyses; and*
- 6) The operating conditions existing at the time of sampling or measurement.*

*40 CFR 70.6(a)(3)(ii)(A); District Rule 2520, 9.4.1. Reports of all required monitoring must be submitted at least every six months. Reports are required to identify all instances of deviations from permit requirements and must be certified by a responsible official. See 40 CFR 70.6(a)(3)(iii)(A); District Rule 9.13.1 and 10.0. Thus, the Permit Unit are not “practically enforceable” because there is no way to determine whether the facility is in compliance with those conditions. Examples of the District’s failure to include “practically enforceable” Permit Unit Requirements are provided below.*

*One example is found in Kern Oil’s Draft Permit. IN Kern Oil’s Draft Permit—in particular, S-37-1-3 Permit Unit Requirement 5, 6, and 7 state merely that compliance with these requirements are demonstrated by firing the unit only on PUC or FERC regulated natural gas. The District offers no explanation of why there are no included monitoring requirements. The District Rules cited (District Rules 2520, subpart 9.3.2 and 4310, subparts 5.1 and 5.23) do not mention that monitoring requirements are met merely by firing the unit on PUC or FERC regulated natural gas.*

*As stated above, permits must contain “conditions as are necessary to assure compliance.” This core requirement is augmented by 40 CFR § 70.6(a)(3), requiring “monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance”, and 40 CFR § 70.6(c)(1) requiring Title V permits to contain “testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit.” If utilizing only PUC or FERC regulated natural gas will inherently yield emissions that meet applicable requirements, the Draft Permit should explicitly explain why this is so. As written, it is not obvious that using only PUC or FERC regulated natural gas will assure compliance with the terms and conditions of the permit and District Rules. Indeed, the basis behind the permit condition should be written so that the public can understand it.*

*This comment is applicable to any other Permit Unit Requirement for any other equipment unit that specifies the use of “only PUC or FERC regulated natural gas” as adequate to demonstrate compliance.*

*Other examples of the District's failure to include "practically enforceable" regulations are also found throughout all of the District's proposed permits. For example, in Kern Oil's Draft permit, specifically, S-37-1-3 Permit Unit Requirement 2 lists a variety of documentation that must be maintained by the operator. Requirement 3 mandates that operator maintain "all records of required monitoring data and support information" for five years. Requirement 3 does not explain if the listed documents included in Requirement 2 fall under the description of "required monitoring data and support information". If the "copies of fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance" referred to in Requirement 2 are indeed in the category of "all records of required monitoring data and support information", then for clarity's sake, the two Requirements should be combined. As they are written, the Requirements are ambiguous as to what exact records must be kept for a period of 5 years.*

*Furthermore, Permit Unit Requirement 2 requires the operator to record daily the amount and type(s) of fuels(s) combusted and all dates on which a unit is fired on any non-certified fuel. Going back to Permit Unit Requirement 5, 6, and 7, which state that compliance is determined by firing the units on PUC or FERC regulated natural gas, the permit reader is left wondering if firing a unit on "non-certified fuel" is the same thing as firing a unit on non-PUC or non-FERC regulated natural gas. If firing a unit on "non-certified fuel" is contrary to the necessity to fire the unit on PUC or FERC regulated natural gas in order to prove compliance with the sulfur compound emissions limitations, then Permit Unit Requirement 2 is essentially asking the operator to record the dates operator was out of compliance with sulfur compound emissions limitations. This demonstrates the problem with having compliance with sulfur compound emissions limitations turning on the type of fuel burned rather than requiring operator to perform straight forward monitoring and testing. If OCE's interpretation of these requirements is correct, does the District monitor the Requirement 2 records which requires the operator to record daily the amount and type(s) of fuels(s) combusted and all dates on which a unit is fired on any non-certified fuel to discover incidents of noncompliance with sulfur compound emissions limitations?*

*To remediate to problems addressed above, we suggest the following language: "The source is required to comply with the following monitoring requirements and include such reports in the six month monitoring reports." Such language is necessary to ensure that the District, U.S. EPA, permit holder and the public are aware of the monitoring and reporting requirements in the permit. This language would then need to be followed by a precise list of the applicable monitoring and reporting requirements.*

**District Response:** The basis for using PUC and FERC regulated gas to assure compliance with sulfur limits in applicable requirements is given on pages 75 and 76 of the application review (not in the permit as you suggest). The analysis shows that natural gas with a sulfur content of 3.3% or less will meet the limits in District Rule 4801 and Kern County rule 407. The application review then goes on to say that "The use of PUC or FERC regulated gas with a maximum sulfur content of .017% will assure compliance with this requirement", which it clearly does since the use PUC gas will keep emissions below the rule limits by a factor of 194. Attachment E to the evaluation includes PUC and FERC gas specifications. The application review then goes on to

specify additional periodic monitoring requirements pursuant to Rule 2520, for non-certified (not PUC or FERC regulated) gas.

In your comments, you note that Condition 2 of S-37-1 includes specific recordkeeping requirements, while condition 3 requires “all records of required monitoring data and support information.” These conditions are consistent with District rule 2520 Section 9.4, which requires that the permit include requirements to maintain records as required by any applicable requirement (40 CFR 60.48c(g) in this case), and all records of required monitoring data and support information. Although there is some overlap between these two conditions, including both these conditions assures that all recordkeeping requirements are addressed in the permit.

We disagree with your assertion that including periodic testing is superior to specifying a fuel that will assure compliance. We believe that allowing the source to show compliance with sulfur limitations by using PUC regulated gas (a certified fuel), which results in emissions lower than the District Rule 4801 limit by a factor of at least 194, is an excellent way to assure compliance with the Rule 4801 limit, and in conjunction with recordkeeping requirements included in the permit, it is not only practically enforceable but it is readily enforceable at all times during the permit term.

In answer to your question, “does the District monitor the Requirement 2 records which requires the operator to record daily the amount and type(s) of fuels(s) combusted and all dates on which a unit is fired on any non-certified fuel to discover incidents of noncompliance with sulfur compound emissions limitations?”—the answer is yes. Facility records are routinely reviewed to evaluate compliance during District compliance inspections.

All applicable monitoring requirements are already included in the proposed permit and can be readily identified by reviewing the conditions for each permit unit, so the “precise list” of monitoring requirements that you recommend we include in the reporting condition would be redundant.

